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ABSTRACT

Behaviors important to success of students enrolled in programs for the educable mentally retarded were investigated with 30 Ss. Hypotheses stated that those behaviors described by the Fourteen Persistent Life Problems (PLPs) and deemed important to academic success of the EMR would correlate significantly with standardized measures of reading achievement and learning potential. The methodology consisted of having six teachers rate each student in terms of degree of deficit for each of the areas defined by the 14 PLPs. A structured, focused interview technique was employed whereby the teacher of each child provided a numerical response on a scale of one to five based upon the developmental expectations for age levels for that child. To establish the importance of student behaviors, six teachers ranked the 14 PLPs in terms of their relative importance to the curriculum as they wre presetting it. The combined rakings were compared with the impressions of groups of six administrators and six teachers of students in the regular programs. Results indicated that "communication of ideas verbally and in writing," as well as "communication of ideas through reading," were preceived as being important by each of the three groups. Case study techniques were employed to investigate predictive aspects of the study. Mainstreamed children who had met with success in the special education program were studied in terms of their degree of success in the regular program. Both hypotheses were rejected. (Author/SB)

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BEHAVIORS OF EDUCABLE MENTALLY RETARDED YOUNGSTERS AS RELATED TO STANDARDIZED MEASURES OF LEARNING POTENTIAL AND ACHIEVEMENT

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ABSTRACT

Behaviors important to success of students enrolled in programs for the educable mentally retarded were investigated by the generation of hypotheses. Hypotheses stated that those behaviors described by the Fourteen Persistent Life Problems (PLPs) and deemed important to academic success of the educable mentally retarded would correlate significantly with standardized measures of reading achievement and learning potential. The hypotheses were tested at the 0.05 level of significance using Pearson's Product-Moment Coefficient of Correlation.

The methodology consisted of having six teachers of the educable mentally retarded rate each student in terms of degree of deficit for each of the areas defined by the fourteen PLPs. A structured, focused interview technique was employed whereby the teacher of each child provided a numerical response on a scale of one to five, based upon the developmental expectations for age levels for that child.

To establish the importance of student behaviors, six teachers ranked the fourteen PLPs in terms of their relative importance to the curriculum as they were presenting it. The combined rankings were compared with the impressions of groups of six administrators and six teachers

of students in the regular program. Results indicated that "Communication of ideas verbally and in writing," as well as "Communication of ideas through reading," were perceived as being important by each of the three groups.

Case study techniques were employed to investigate predictive aspects of the study. Mainstreamed youngsters who had met with success in the special education program, were studied in terms of their degree of success in the regular program.

Data provided in this study demonstrated that coefficients of at least 0.349 would have been necessary for acceptance of the hypotheses. Both hypotheses were therefore rejected.

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CHAPTER I

RATIONALE AND DEVELOPMENT

In education, academic and non-academic behavior of the student is an integral part of the evaluation process. Not only have students been graded upon their conduct, but more importantly, academic attainments have provided the basis for a child being promoted or retained. Dedicated teachers have been genuinely interested in the various behaviors of their students.

The Problem

The intent of this study was to determine whether students' behaviors, as described by the Fourteen Persistent Life Problems (PLPs) would correlate with results of standardized measures of learning potential and achievement. To investigate the relative importance of the various PLPs as perceived by educators was also a facet of the intent of this study. If success could have been predicted from these behaviors, their importance would have been even further substantiated.

Background

The scientific study of behavior has been the essence of the discipline of psychology. Observations of behavioral phenomena have been of interest to mankind since pre-historic times. However, it has only been within the past century that attempts at scientific measurement have emerged. The scientific methods of measurement have been enhanced through techniques of controlled observation.

During the past two decades it has become increasingly important that the behavior of children enrolled in programs for the exceptional child be closely evaluated[1] through the use of scientific instruments and controlled observation. This phenomenon has been noted in a review of the literature.[2]

Recent legislation as a result of court decisions mandates that behaviors of exceptional children be evaluated in conjunction with learning potential.[3] The reason for such legislation, e.g., Public Law 94-142, was to insure that students be placed to best meet their individual needs.

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[1] Jane R. Mercer, Labeling of the Mentally Retarded (Berkeley: University of California Press, 1973), p. 96.

[2] See Chapter II, pp. 15-34, below.

[3] Linda Jean Cole, "Adaptive Behavior of the Educable Mentally Retarded Child in the Home and School Environment" (Ph.D. dissertation, University of California, 1977), p. 4.

An increasing number of behavior rating scales presumed to measure adaptive behavior have been marketed in response to this need. Many of the rating scales have been inappropriate for use within the scholastic environment, yet school psychologists have been required to use such instruments. Reasons for their inappropriateness vary and will be discussed under Review of Literature.[1] The basic reason a commercially produced behavior rating scale was not used in this study was that none of the scales focused upon the Persistent Life Problems as described in this chapter.

Goals

Goals for this study were twofold. The initial goal was to identify the behaviors most important to academic and non-academic success occurring during that period of time which the student spends in the classroom for the educable mentally retarded. Once these behaviors were identified, a second goal was to determine whether these behaviors did, in fact, predict the success of the student. Findings of this second goal concerning learning potential answered a question posed by this study, namely: What, if any, was the relationship between the Persistent Life Problems and the child's IQ score?

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[1] See Chapter II, pp. 15-34, below.

Procedure

To investigate the intent, hypotheses and goals, the following steps were carried out. First, the relative importance of the various behaviors was determined through the teachers' ranking the Fourteen Persistent Life Problems. Teachers of the educable mentally retarded ranked these behaviors in order of importance to their classroom program. The results of the ranking of scores were then combined into a frequency distribution and subjected to further statistical analysis.

The procedure was therefore to have the teachers of the educable mentally retarded rate each of their students in terms of degree of deficit on each of the Fourteen Persistent Life Problems. These fourteen problems were stated in a manner conducive to behavioral rating. The coefficients obtained from the correlation of behavior ratings with measures of achievement were then compared with the results of the educators' rankings obtained through the process discussed above.

To determine which behaviors did in fact predict success required that each behavior on which the child was rated be correlated with an indicator of the child's learning potential. The student's IQ was used as the measure of learning potential in this study. Only those behaviors which were earlier deemed important should have correlated with the IQ score if they were valid predictors. Results of correlations provided questions for further analysis.

Case studies were also carried out to investigate this matter of predictability.

Second, the statistical correlations were determined. The students' reading achievement levels on the Wide Range Achievement Test were correlated with each of the fourteen behavioral areas. The standardized measures of achievement should significantly correlate with those behaviors deemed important. Conversely, no significant relationship between achievement test scores and the behavior rating would infer a lack of importance of that behavior.

Assumptions

As pointed out above, when discussing the Fourteen Persistent Life Problems, one must have assumed (1) that these problems were indeed crucial to survival in the modern world, and (2) that certain of these fourteen areas may not have been important to student success in the classroom. However, one must also have assumed that some of them would be shown to be important in order to carry out this study.

One must also have assumed that courses of study for the educable mentally retarded possessed certain similar objectives. These objectives, based upon traditional values, were considered universal throughout our society, e.g., teaching children to read, write, manipulate numbers, etc. This assumption was necessary in order to infer that the results of this study would have the potential of being applied to other groups of EMR students.

One must have assumed that the teachers were the best authorities among all the various staff members to make the evaluations required in this study. Teachers were asked to rank the fourteen persistent life problems in order of importance to the EMR program, and to rate each of their students in terms of degrees of deficit. That the teachers were the best authorities might have been justified from the position that the teacher worked on a daily basis with the students in terms of planned activities. No other staff member spent as much time with the children as did the teacher. No other staff member had to plan daily activities for these youngsters to the extent that this teacher had to plan them. Moreover, it ultimately became the responsibility of the classroom teacher to evaluate the student's progress during that period of time which the student spent with this teacher.

The selected standardized measures of learning potential and achievement must have been assumed to have been valid. Also, they must have been assumed to have been administered properly during the process of selecting students for placement in special classes. The degree of measured learning potential and achievement was assumed to have been accurate for each of the students used in this study.

Correlation techniques were used as a means of statistical analysis throughout the annals of research. Although hazards of inference were present, chance acceptance of hypotheses was minimized. However, one's attention must be drawn to the remote possibility of error through the chance acceptance of hypotheses.

Rationale

A major underlying condition of this entire study was that the current curriculum as presented by the teachers was based upon the Fourteen Persistent Life Problems. Teachers of the educable mentally retarded had been provided with copies of Measurable Objectives, adopted as the statewide recommended curriculum. Educational plans for each EMR youngster, required by law, were to be based upon an accepted curriculum as were daily lesson plans with individual needs taken into consideration.

Some teachers placed greater emphasis upon certain aspects of the curriculum than other teachers. The rationale therefore dealt with ascribing relative importance to various aspects of the curriculum. The results of this study might also have been used to verify or repudiate this underlying condition of curriculum application, even though this issue was not a stated hypothesis.

Hypotheses

This study was based upon the following two hypotheses:

1. Those behaviors described by the Fourteen Persistent Life Problems and deemed to be important to the academic success of the educable mentally retarded child would

correlate significantly with a standardized measure of achievement

2. Those behaviors described by the Fourteen Persistent Life Problems and deemed to be important to the academic success of the educable mentally retarded child would correlate significantly with a standardized measure of learning potential

Importance

During the past century, many psychological and educational concepts have been generated relative to underachievement, curriculum design and accountability. Despite all of the frequently used terminology associated with these concepts, a theory relating these concepts to each other had been lacking.[1] This study was one attempt to begin to devise a theory integrating educational and psychological concepts through the above mentioned hypotheses.

Teacher effectiveness was a prime issue in any discussion of programs for the educable mentally retarded in Ohio at the time of this study. Recent legislation had required that these teachers demonstrate accountability for progress of their students. Thus, teachers would have to identify those behaviors related to curriculum objectives which were most important to the success of the child. Once identified, teachers could focus their efforts upon improving those behaviors through written individualized plans for each child. This matter of importance was closely aligned with the rationale for this study.

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[1] Joseph D. Novak, A Theory of Education (Ithaca, New York: Cornell University Press, 1977), p. 18.

As mentioned earlier, the researcher assumed that not all of the Fourteen Persistent Life Problems appeared to be essential to academic success in school. Many of them, although a part of the accepted curriculum appeared to be more fitting to life adjustment. This study also was intended to demonstrate which of the fourteen areas were important to academic success and which of the fourteen areas were important to life adjustment.

Teachers have reported a need for prescriptive input for the writing of the on-going individualized plans. School psychologists have traditionally provided the teacher with IQ scores, scores for and projective results of human-figure drawings, general achievement levels, etc. Diagnostic efforts have been limited to activities such as determining preferred sensory modalities, and uncovering certain types of physical and emotional involvement. Teachers have needed specific suggestions regarding academic areas which should be focused upon. This study was one attempt to provide general suggestions.

Curriculum evaluation has been another concern of educators. Too often, a curriculum such as Measurable Objectives, if field-tested, was adopted without an on-going evaluation. After a thorough review of the literature, the researcher concluded that an objective follow-up study concerning the validity of the Measurable Objectives had not been conducted. Results of this study were intended for evaluative purposes.

Plans for future Ohio Standards for Special Education were distributed by the Division of Special Education on January 3, 1979. These proposed standards contained no IQ score cut-offs to determine placement of the retarded into either the trainable mentally retarded or the educable mentally retarded program. Traditionally, the IQ score cut-off had been 50 in Ohio. The adoption of the new standards would have required all professional persons working with the retarded to have sharpened their observation skills to determine which program would best suit any given exceptional child. Before criteria were established for strengths and deficits of observable behaviors, identification must have been made of behaviors important for success. The purpose of this study was to investigate these behaviors.

Definition of Terms

To improve readability, the following terms have been defined.

Behaviors (important to the success of the educable mentally retarded). Those in-school behaviors outlined by the Fourteen Persistent Life Problems upon which Measurable Objectives was based.

Learning Potential (1) theoretically defined as what one might do if all conditions necessary for success might occur, i.e., "functional capacity,"[1] (2) operationally defined as the most recent IQ score obtained from an appropriate, individually administered intelligence scale.

Achievement (1) theoretically defined as what one can do now,[2] (2) operationally defined for the purpose of this study as the score on the reading subtest of the Wide Range Achievement Test, administered at the beginning of the current school year or the end of the previous school year, according to school policy for monitoring overall performance of children enrolled in any type of special education classes. Achievement thus represented what the child had learned resulting from instruction.

Limitations

This study dealt only with educable mentally retarded students in the public school setting. Although carried out in the public schools, results might be generalized to classes for the educable mentally retarded in other settings if similar curriculum objectives were presented in definitions of the above terms.

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[1] Lita Linzer Schwartz, Educational Psychology: Focus on the Learner (Boston: Holbrook Press, Inc., 1972), p. 230.

[2] Interview with Robert Pitcher, at Walden University Summer Session, Newark, Delaware, 6 July 1979.

This study was carried out in the Union Local School District of Belmont County, Ohio, a district with a total enrollment of approximately twenty-two hundred students. Socio-economic conditions, reflected by teacher salaries, millage obtained from levies to support the schools, and costs per pupil expenditures, although average for Belmont County, were among the lowest in the state.[1] These two factors concerning size and socio-economic conditions provided potential limitations with respect to generalizing the results to other groups of students.

The Union Local School District, located in rural Ohio, had a non-white student population averaging less than three per cent. Data provided by this study should not be generalized to populations where a greater variety of racial-ethnic backgrounds would be present.

A further limitation to the study was the involvement of only six classroom units for EMR students. This factor limited the random sampling that otherwise might have been carried out in a larger district.

The six teachers were fully certified and represented from one to twenty-nine years of experience in classroom teaching. The number of students involved in this study was adequate for the use of Pearson's Product-Moment

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[1] Ohio Division of Computer Services and Statistical Reports, Cost per Pupil, 1977-78 (Columbus, Ohio: 1979), p. 3.

Coefficient of Correlation.[1] However a larger district could have provided a researcher with a larger population of EMR students and teachers of the educable mentally retarded. The above description inferred that this study was carried out in a district atypical of a cross-section of the general population. If a cross-section would have been required, a multi-cultural pluralistic model of assessment might have been necessary.[2] Such an approach to investigate the described behaviors was beyond the scope of this dissertation; however, other researchers might consider using a cross-section of the general population. Thus, by using a more homogeneous socio-cultural group, one might assume that intervening variables were less operative.

Adaptive behavior was mentioned earlier in this chapter with reference to background of the problem. Adaptive behavior as mentioned was a much broader concept than the defined behaviors to which this study addressed itself. Although many of the behaviors discussed were adaptive behaviors by definition, adaptive behaviors also included out-of-school behaviors not covered in this study. This dissertation dealt with those in-school observables described by the Fourteen Persistent Life Problems.

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[1] John C. Townsend, Introduction to Experimental Method (New York: McGraw-Hill Book Company, Inc., 1953), p. 214.

[2] Jane R. Mercer, SOMPA Technical Manual (New York: The Psychological Corporation, 1979), p. 39.

This study focused upon information provided by the classroom teacher of the educable mentally retarded with respect to deficits in the students' behaviors. Although the classroom aide, the supervisor, or other persons might have had opinions which could have been just as valid regarding the degree of student success, the scope of this study was limited by the frame of reference of the teaching personnel. Observation by teaching personnel was not to be assumed to be adequate for total out-of-school life adjustment, but only in-school success. Other educators were included during the ranking process to avoid sole reliance upon the teacher of EMR children.

Summary

Despite limitations and assumptions, this study was important for the following major reasons:

1. It attempted to devise a theory to integrate educational and psychological concepts
2. It attempted to provide the teacher with information to enhance effectiveness of their programs for the Educable Mentally Retarded
3. It attempted to show a correlation between Persistent Life Problems and standardized testing

The conclusions reached by the researcher addressed themselves to these points.

CHAPTER II

REVIEW OF LITERATURE

Historical Background

As pointed out in Chapter I, behavior of youngsters being considered for programs for the educable mentally retarded must be assessed. There was little need to assess students in behavioral terms as the normative era provided statistical concepts such as IQ which were stressed by psychologists. Prior to the normative era, indicated by the testing movement of the early 1900s, the concept of mental retardation included inadequate social behaviors. Most important during this earlier period was the matter of how others perceived the abilities of the individual with respect to his behavior.[1] Whether or not a person was judged to be retarded depended upon how he or she performed at tasks of daily living.

Historically the retarded have been classified according to the degree of retardation for clinical as well as educational purposes. The degree of retardation was described in terms of the following categories:

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[1] Kazuo Nihira and Max Shellhaas, "A Study of Adaptive Behavior, Its Rationale, Method and Implications in Rehabilitation Programs," Mental Retardation 8 (October 1970):11.

TABLE 1

Degrees of Retardation

Category	IQ Scores
idiot	0-20 or 25
imbecile	20 or 25-50
moron	50-70
borderline	70-80 or 85
dull normal	above 80 or 85 to the lower end of the average range[1]

This schema based upon normative data did little to describe the causes of retardation. Moreover, no distinction was made between the clinical and educational etiology of the problem.

The clinical model based upon physical development focused upon pathology. Terms such as "cretin," "mongoloid," and "microcephalic," were to be found throughout the early literature.[2] The educational model not only focused upon the physical nature of the problem but the social aspects of the problem were also covered. Terms such as "feeble minded," "mentally deficient," "mentally handicapped," and "slow learner" were not specific medical terminology as employed in the clinical model.[3] Such terminology was employed, however, for purposes of organizing educational programs for the retarded.

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[1] Samuel A. Kirk and G. Orville Johnson, Educating the Retarded Child (New York: Houghton Mifflin Company, 1951), pp. 4-5.

[2] Alfred F. Tredgold, A Textbook of Mental Deficiency, 6th ed. (Baltimore: William Wood and Co., 1937), p. 207.

[3] Kirk and Johnson, p. 8.

Doll described the mentally deficient in terms of both the clinical and educational models. Six areas of concern were listed: socially incompetent, mentally subnormal, retarded from birth, retarded at maturity, mentally deficient as a result of constitutional origin through heredity or disease, essentially incurable, i.e., irremediable and uneducable.[1]

In 1951, Kirk and Johnson wrote:

> Slow learners should remain in the regular classes of the public school and teachers should adapt instruction to fit the wide variation which will include the slow learner, the average and the superior.[2]

Emphasis here was placed upon organizing the regular program to meet the needs of the slow learner within the regular program. At the time of this study such an approach had also been accepted.

Kirk and Johnson also wrote, "A thorough study of a child should in most cases place the child in the most profitable situation for both the child and society."[3] The concern was then expressed that a thorough evaluation should precede placement. At the time of this study, the same concerns were emphasized through public legislation as indicated throughout this chapter.

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[1] Edgar A. Doll, "The Essentials of an Inclusive Concept of Mental Deficiency," American Journal of Mental Deficiency 46 (October 1941):219.

[2] Kirk and Johnson, p. 12.

[3] Ibid., p. 14.

As early as 1955, the American Association on Mental Deficiency (AAMD) provided the impetus for the inclusion of observable behavior as a dimension in the definition of mental retardation.[1] The AAMD's technical project on terminology began in that year and concluded with the publication of a manual in 1959, edited by Richard Heber, which contained the following definition of mental retardation:

> Mental retardation refers to sub-average general intellectual functioning originating during the developmental period and is associated with impairment of adaptive behavior.[2]

This reference to adaptive behavior in the above quotation appears to be the first such reference to the importance of evaluating behavior which for so many years had been ignored by those who subscribed to numerative methods for evaluating retardation.

In a later work, Heber discussed the importance of behavior in terms of "adaptive behavior." As in years prior to the testing movement, emphasis in 1961 again was placed upon the effectiveness to which the retarded individual could meet the social demands of his environment.[3]

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[1] Ibid., p. 12.

[2] Richard Heber, ed., Manual on Terminology and Classification of Mental Retardation (Washington, D.C.: American Association on Mental Deficiency, 1959), p. 3.

[3] Richard Heber, "Modification in the Manual on Terminology and Classification of Mental Retardation," American Journal of Mental Deficiency (Monograph Supplement, 1961):61.

Objections to this focus by psychologists immersed in the testing movement centered around the issues that no test other than the Vineland Social Maturity Scale had been developed to adequately measure this construct, and that definitions of the term "adaptive behavior" were too vague so that measurement of its parameters was impossible.[1]

Response to these concerns resulted in the funding of a five year project in 1964 by the National Institute of Mental Health which became known as the Parsons Project. Results of this research gave rise to many of the adaptive behavior scales developed during the 1970s. The American Association on Mental Deficiency (AAMD) Adaptive Behavior Scale, referred to in the literature as "the Adaptive Behavior Scale" or "the AAMD," became one such scale.[2]

Adaptive behavior as applied to the public schools became defined as having two component parts. They were listed as follows:

1. the degree to which the individual is able to function and maintain himself independently
2. the degree to which that person satisfactorily meets the culturally imposed demands of personal and social responsibility[3]

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[1] Henry Leland, "Mental Retardation and Adaptive Behavior," Journal of Special Education 6 (January 1972):72.

[2] Nadine Lambert et al., Manual for the Public School Version of the AAMD Adaptive Behavior Scale (Washington, D.C.: American Association on Mental Deficiency, 1975), p. xi.

[3] Myra Windmiller, "Effective Use of the Public School Version of the AAMD Adaptive Behavior Scale," Mental Retardation 15 (June 1977):42.

Behavior assessment in the classroom environment, however, went beyond measurement of adaptive behavior as defined above. One must remember that, through the expanding concept of adaptive behavior scales for the retarded, interest in assessing behavior was rekindled.

Court litigation provided the actual impetus for this renewed interest. Cases such as Charles S. v. Board of Education, San Francisco; Larry P. v. Wilson Riles; and Diana v. California State Board of Education dealt with contested placements of minority children in special education classes solely on the basis of an IQ score. The major arguments in all of these cases were based upon the premise that black children and children from non-English-speaking homes were penalized by the use of standardized intelligence tests which did not reflect ability to behave appropriately when the child was outside of the scholastic environment.[1] Although it was beyond the scope of this treatise to debate the above premise, need for further assessment beyond the determination of IQ will be shown to have been necessary.

The trend toward legislation requiring more than the administration of a single IQ test was next evidenced by reactions from government and professional organizations to litigation. Opinion statement preceded specific mandates by the government. In 1971, the National Association for Retarded Children stated:

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[1] Lambert et al., p. xi.

> The classification of retardation should not be applied until the child's adaptive behavior has been assessed in relation to the community and family situation taking into account the cultural norms of his natural milieu. Where adaptive behavior in any life situation is found to be significantly discrepant from intellectual expectations, the label retardation should not be used at least until further observation has justified it.[1]

Again the importance of observation in the assessment process was brought to the attention of evaluators, especially when a discrepancy was suspected. It became imperative that "a composite of many aspects of behavior and a wide range of abilities and disabilities"[2] be viewed.

Major legislation followed opinion statements of professional and governmental organization and was exemplified by the following evaluation procedures outlined in the Federal Register:

> No single procedure is used as the sole criterion for determining an appropriate educational program for a child; and . . . . The child is assessed in all areas related to the suspected disability including, where appropriate, health, vision, hearing, social and emotional status, general intelligence, academic performance, communicative status and motor abilities.[3]

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[1] National Association for Retarded Children, Classification and Placement in Special Education Classes: A N.A.R.C. Position Statement (New York: National Association for Retarded Children, 1971), p. 14.

[2] Office of Civil Rights, Elimination of Discrimination in the Assignment of Children to Special Education Classes for the Mentally Retarded (New York: Office of Civil Rights, 1972), p. 19.

[3] "Title 45--Public Welfare, Education of Handicapped Children," Federal Register 42, no. 163, 23 August 1977, 42497.

Not only did this law state that no single procedure was to be used, but also it defined what areas were to be assessed as related to any suspected disability.

School districts and state government acted prior to federal mandate in some cases. In 1976, Standards for Special Education for the State of Ohio stated a mandate that no single evaluation procedure was to be used by definition of the words "Multi-Factored Evaluation."[1] In 1977 this definition was refined to read:

> Multi-Factored Evaluation means an evaluation of more than one area of a child's functioning so that no single procedure shall be the sole criterion for determining an appropriate educational placement. This process shall be designed to insure that children are not misclassified or unnecessarily labeled as being handicapped because of inappropriate selection, administration, or interpretation of evaluation materials.[2]

The refinement of the definition in the second sentence above parallels the position statement of the National Association of Retarded Children cited earlier. The importance of carefully observing the child was alluded to so that the child would not be labeled.

An example of one school district's attempt to act prior to federal mandate is given below:

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[1] Ohio Department of Education, Standards for Special Education (Columbus, Ohio: Ohio Department of Education, 28 August 1976), p. 70.

[2] Ibid., 25 April 1977), p. 94.

> The assessment shall be a multi-factored evaluation measuring more than one area of the child's functioning. No single measurement shall be the sole criterion for determining a child's educational placement.[1]

Although it has been shown that federal, state and local regulations require multi-factored evaluations, the major issue still to be resolved can be stated in the following question: What specific techniques other than measures of IQ might be used with educable mentally retarded to indicate that the evaluation is multi-factored?

Assessment of Achievement and Intelligence

In Ohio, Standards for Special Education specifies that "achievement, adjustment and social adaptability"[2] be assessed as well as general intelligence when considering youngsters for placement with the educable mentally retarded. Assessment of achievement was quite easy with the abundance of standardized achievement tests available commercially. The Wide Range Achievement Test, for example, indicated validity coefficient generally within the range +.80 to +.90 when compared with other reading achievement tests and has been quite widely used in the schools.[3]

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[1] Union Local/Belmont County Schools, "Placement Procedures--Special Education Manual," Belmont, Ohio: Union Local/Belmont County Board of Education, May 1977, p. 19. (Mimeographed.)

[2] Ohio Department of Education, Standards for Special Education, p. 35.

[3] J. F. Jastak and S. R. Jastak, WRAT Manual, The Wide Range Achievement Test (Wilmington, Delaware: Guidance Associates of Delaware, Inc., c. 1965), p. 16.

The authors of the Wide Range Achievement Test used in this study defined reading as:

> the process of transcoding a series of visual-motor symbols into oral or sub-oral sound sequences . . . . A reading disability is an impairment of this process of transcoding.[1]

Transcoding was further defined as "the central process of auditory input to allow unimpeded visual and motor output and vice versa."[2]

Reading however involves a wide variety of skills. Knowledge level, comprehension, application, analysis, synthesis, and evaluation[3] are examples of skills different from transcoding; however, reading is dependent on decoding. Even subdivisions of these areas are possible; for example, comprehension also can be further broken down into literal understanding, interpretation, and problem solving.[4] As one can see, reading is a highly complex process.

The reading subtest of the Wide Range Achievement Test was based upon the physical process of transcoding however. Despite the complexity of the reading process, reported correlations between results of this reading subtest and other reading subtests are of the magnitude reported earlier. The 1976 edition of this test was identical to the 1965 edition which attested to its acceptance[1] by psychologists.

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[1] Ibid., p. 25.

[2] Ibid.

[3] Albert J. Harris and Edward R. Sipay, Effective Teaching of Reading (New York: David McKay Company, Inc., 1971), p. 306.

[4] Robert M. Wilson and Maryanne Hall, Reading and the Elementary School Child, Theory and Practice for Teachers (New York: Van Nostrand Reinhold Company, 1972), p. 172.

Standardized measures of intelligence traditionally employed by psychologists in the schools have been accepted as valid. A comparison between the Stanford-Binet, Form L-M, 1972 norms and the Wechsler Intelligence Scale for Children--Revised (both instruments used in this study) indicated that both instruments yielded similar IQs for children between six and sixteen years of age. When comparisons of the Wechsler full scale IQ score were made with the Stanford-Binet IQ score, the Stanford-Binet was about two points higher at ages 6, 9 1/2, and 12 1/2. The Wechsler was about two and one-half points higher at age 16 1/2.[2]

Adjustment and social adaptability were more difficult to assess due to the lack of widely recognized instruments relevant to the educational setting. A review of notable scales is now given in terms of behavioral assessment of adaptive behaviors.

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[1] J. F. Jastak, S. W. Bijou, S. R. Jastak, Wide Range Achievement Test (Wilmington, Delaware: Jastak Associates, Inc., 1976), p. 4.

[2] David Wechsler, Manual for the Wechsler Intelligence Scale for Children--Revised (New York: The Psychological Corporation, 1974), p. 51.

Assessment of Behavior

Although the State Department of Education in Columbus, Ohio had not recommended that any specific adaptive behavior scale be used, a list of suggestions had been provided.[1] Examples of measures that were not acceptable were also given with criteria for their rejection. The criteria centered around the following definition of adaptive behavior--"the effectiveness or degree with which the individual meets the standards and social responsibility expected of age and cultural group,"[2] and the concept of inappropriate selection of evaluation material.[3] It was from this list that examples were taken for the following discussion.

The Vineland Social Maturity Scale, hereafter referred to as "the Vineland," represented an early attempt to measure observable behaviors of the retarded and was employed for such purposes at the time of this study. It provided

> . . . a definite outline of detailed performances in respect to which children show a progressive capacity for looking after themselves and for

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[1] Janet Liston, "Memorandum: Assessment of Adaptive Behavior," State of Ohio, Department of Education, Division of Special Education, Columbus, Ohio, 26 January 1979. (Mimeographed).

[2] Herbert J. Grossman, ed., Manual on Terminology and Classification in Mental Retardation. American Association on Mental Deficiency Special Publication Series No. 2 (Baltimore, Maryland: Garamond Pridemark, Inc., 1973), p. 11.

[3] Liston, p. 3.

> participating in these activities which lead toward ultimate independence as adults.[1]

As reported, emphasis was placed upon autonomy.

A major value of the Vineland has been its parent interview format,[2] which also would have been a liability for use in the school by psychologists with teachers. Norms would not have been applicable. A further complication was that many of the behaviors listed on the scale would have been most difficult to observe in the classroom setting by the teacher.[3] The Vineland, not having been revised since 1965,[4] was at a disadvantage in the 1960s and 1970s.

The only adaptive behavior scale suggested by the Ohio Department of Education, other than the Vineland, to be found in Buros, The Seventh Mental Measurements Yearbook, was the Denver Developmental Screening Test, hereafter referred to as "the Denver,"[5] which was developed in the 1960s. Relying upon accurate reporting of observations of social, language, and motor phenomena, and with an age range from two weeks to six years, its current purpose has been limited to merely ascertaining whether or not a child's progress was within the normal range.[1] In the public school setting its use remained limited to kindergarten and first grade; hence the Denver was inappropriate for use at all age levels in this study.

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[1] Edgar A. Doll, Vineland Social Maturity Scale: Condensed Manual of Directions, 1965 Edition (Circle Pines, Minnesota: American Guidance Service, 1965), p. 1.

[2] Ibid., p. iii.

[3] Ibid., p. 54.

[4] American Guidance Service, Instructional Programs, Tests, Educational Materials, 1979 Catalog (Circle Pines, Minnesota: American Guidance Service, 1979), p. 24.

[5] Oscar K. Buros, ed., The Seventh Mental Measurements Year Book (Highland Park, New Jersey: Gryphon Press, 1972), p. 733.

The Social and Prevocational Information Battery (SPIB), copyright 1975, attempted to assess knowledge of certain skills and competencies regarded as important for the community adjustment of the educable mentally retarded. It was inappropriate for use throughout the proposed study for reasons similar to those given for the Denver Developmental Screening Test. The SPIB was designed to evaluate students of high school status. Its true-false format of 277 items provided ratings for nine different areas with at least 26 items being keyed to each area.[2] By comparison, the Vineland contained only 117 items over an age range of 0 to 25+ years.[3] As pointed out earlier, more recent efforts to rate behavior possess greater sophistication than earlier attempts.

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[1] Ladoca Project and Publishing Foundation, Catalog of Screening Test Materials (Denver, Colorado: Ladoca Project and Publishing Foundation, n.d.), p. 2.

[2] Andrew Halpern et al., Examiner's Manual, Social and Prevocational Information Battery (Monterey, California: CTB/McGraw-Hill, 1975), p. 1.

[3] Doll, p. 7.

The Camelot Behavioral Checklist, like the Vineland, provided behavioral descriptions. Three hundred ninety-nine items were grouped into ten domains. The items were scored in terms of positive and negative responses similar to the true-false format of the SPIB. Its focus was upon the trainable retarded with its emphasis upon "resident" rather than "student" and therefore was not applicable to the planned research or for use by psychologists working with teachers in Ohio public schools. Its sophistication lay in the nature of the information provided which could be used as specific training objectives by the teacher. An attempt to reclassify the retarded to higher levels as improvement occurs was the underlying philosophy of this approach.[1]

The Learning Accomplishment Profile Diagnostic Edition Revised (LAP-D), designed for children ages zero through six years was based upon philosophy and theory similar to the Camelot Behavioral Checklist. What this behavioral scale provided was:

1. evaluation of the child's entry skills, prior to the inception of the instructional program
2. evaluation of the child's exit skills after the conclusion of an instructional program
3. validation of the intervention program[2]

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[1] Ray W. Foster, Camelot Behavioral Checklist Manual, 1977 Edition (Lawrence, Kansas: Camelot Behavioral Systems, 1974), p. 2.

[2] David W. LeMay, Patricia M. Griffin, and Anne R. Sanford, Examiner's Manual, Learning Accomplishment Profile Diagnostic Edition (Revised) (Winston-Salem, North Carolina: Kaplan Press, 1977), p. 9.

Misuses of this behavior scale were defined by the authors of the scale as labeling children as retarded, identifying them according to process dysfunction, and selecting children for placement in special education.[1] No reference was made to the concept of multi-factored evaluation. This scale was based upon a task-analytical assessment technique, i.d.,

> . . . the recognition and identification of a particular skill through trained observation, . . . its proper use, and proper interpretation should enable the teacher to develop appropriate instructional objectives and strategies, and should inhibit the formation of causal assumptions about the child's behavior.[2]

Jane Mercer developed the Adaptive Behavior Inventory for Children (ABIC) which was incorporated into Systems of Multicultural Pluralistic Assessment (SOMPA). With strongly held convictions that previous assessment procedures had discriminated against non-whites, Mercer's assessment technique employed norms for Blacks, Whites, and Hispanics. The ABIC was developed from tape recordings of parent interviews which were referred to as field screening. The format, similar to many of the tests already reviewed, was objective since choices were readily available to the respondent.[3]

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[1] Ibid., p. 10.

[2] Ibid., p. 7.

[3] Mercer, Labeling of the Mentally Retarded, p. 287.

One might note that as of June 1977, at the time the ABIC and SOMPA were in press, "the Mercer Scale" as it was referred to, was being criticized for being generated from parent input only.[1] As cited below, the source of this criticism was one of the researchers associated with the development of the AAMD Adaptive Behavior Scale. Nevertheless, its use with parents made it inappropriate to this study.

As Mercer pointed out in 1973, the ABIC would be used in conjunction with the entire SOMPA system.[2] The ABIC was printed on a protocol with other parts of the SOMPA system and was definitely intended for use with that entire system.[3] For purposes of this study, use of the SOMPA system was unnecessary.

The AAMD Adaptive Behavior Scale (Public School Version) represented the most exhaustive and comprehensive effort to assess adaptive behavior.[4] Domains were designed from factor analysis.[5] It consisted of two parts. Part one, organized along developmental lines, was designed to evaluate an individual's skills in ten behavior domains and twenty-one subdomains. Part two surveyed the social expectations placed upon the retarded and was designed to provide measures of maladaptive behavior related to personality disturbances.[1]

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[1] Windmiller, p. 43.

[2] Mercer, Labeling of the Mentally Retarded, p. 287.

[3] Lenard Baca and Hermes Cervantes, "The Assessment of Minority Students: Are Adaptive Behavior Scales the Answer?", Psychology in the Schools 15 (July 1978):369.

[4] Daniel R. Malone and Walter P. Christian, "Observation as a Screening Measure for Special Education Placement," American Journal of Mental Deficiency 79 (January 1975):377.

[5] Nadine M. Lambert and Richard C. Nicoll, "Dimensions of Adaptive Behavior of Retarded and Non-Retarded Public School Children," American Journal of Mental Deficiency 81 (November 1976):226.

Although much criticism has been presented regarding the adapting of already existing scales to the public school environment,[2] the authors remedied the AAMD by restandardization after removing items most appropriate to the environment of institutions.[3] Such refinement during the 1970s added to its comprehensiveness giving it advantage over scales developed later in that decade. Weaknesses of the AAMD were reported to be that it included little data from the school and home and had a number of items which might have discriminated against youngsters from lower socio-economic backgrounds.[4]

With respect to the proposed study, the AAMD contained little content related to the cognitive domain.[5]

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[1] Lambert et al., Manual for the Public School Version of the AAMD Adaptive Behavior Scale, p. 1.

[2] Nadine M. Lambert and Myra B. Windmiller, Standardization of the Public School Version of the AAMD Adaptive Behavior Scale," Mental Retardation 13 (April 1975) :3.

[3] Lambert et al., Manual for the Public School Version of the AAMD Adaptive Behavior Scale, p. 35.

[4] Baca and Cervantes, p. 369.

[5] Lambert and Nicoll, p. 226.

Cognitive factors must be considered when issues involving prediction of success in school are to be under discussion[1] so that, in spite of its merit and degree of development, the AAMD Adaptive Behavior Scale, although representing the most sophisticated development of any of the scales reviewed, was not applicable for this study.

From this non-definitive yet representative review of attempts to assess observable behaviors, it can be seen that adaptive behavior assessment implied different meanings in different positions.[2] The diversity among the various scales attested to this point.

Summary

To note the close parallel between the emergence of legislation and concern regarding ethical matters has been interesting. As laws were enacted, conscience levels were raised. With the exception of the AAMD Adaptive Behavior Scale, as time progressed, scales became more sophisticated. At the same time, many of their basic formats with true-false and multiple choice questions allowed them to be easily understood by the informant for the client.

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[1] Julian C. Stanley and Kenneth D. Hopkins, Educational Evaluation and Psychological Measurements (Englewood Cliffs, New Jersey: Prentice-Hall, 1972), p. 332.

[2] Susan C. McDevitt, Sean C. McDevitt, and Marvin Rosen, "Adaptive Behavior Scales, Part II; A Cautionary Note and Suggestions for Revisions," American Journal of Mental Deficiency 82 (September 1977):212.

Using ideas related to the work of others in their attempts to assess behavior, even though what has been developed commercially cannot be readily adapted, efforts were made to devise a study to answer the question posed initially: Which student behaviors are related to standardized measures of achievement and learning potential, thereby predicting the success of the child enrolled in the program for the educable mentally retarded? With respect to this problem as it was developed in earlier sections of this study, nothing had been found in the literature which provided a direct answer.

CHAPTER III

METHODOLOGY

Research Design

The methodology selected for this study was to represent both empirical and statistical techniques to evaluate the following hypotheses:

1. Those behaviors important to the academic success of the educable mentally retarded (EMR) child will correlate significantly with a standardized measure of achievement.
2. Those behaviors important to the academic success of the educable mentally retarded (EMR) child will correlate significantly with learning potential.

This research was a field study for the following reasons:

1. It was ex post facto with respect to manipulation of the independent variables, reading achievement and learning potential.
2. It tested hypotheses and explored relationships so as to investigate new significant variables. Specifically, each of the Fourteen Persistent Life Problems (PLPs) were correlated with measures of achievement and learning potential as determined by standardized tests.

3. It was carried out in a rural county school district. The community was located in the east central section of Ohio. The population of the county in which the school district was located was approximately forty-two thousand who mainly represented a white Anglo-Saxon culture. The majority of the labor force was employed as coal miners or farmers. Professional people in the area were teachers, one lawyer, one doctor, and one state representative. To further explain the setting, the following table is presented.

TABLE 2

Population of the Community Involved in This Study (1979)

	Below Average	Average	Above Average
1. Socio-economic conditions of community	X		
2. Intelligence of subjects	X		
3. Education of parents		X	
4. Size of school district		X	
5. Variety of ethnic and racial groups within the community	X		

The school district served approximately twenty-two hundred children who were housed in six buildings--five elementary and one high school. The curriculum was organized on a kindergarten through grade twelve pattern. A survey of the various buildings showed that approximately 220 students received some type of special education instruction. Seventy-nine of these 220 were enrolled in classes for the educable mentally retaried.

Research Strategy

The hypotheses required correlation coefficients and were tested at the 0.05 level. Behaviors important to the scholastic environment of the educable mentally retarded should have correlated significantly with learning potential for reasons discussed in Chapter I.[1] Failure to correlate at the 0.05 level of significance for any of the fourteen behaviors resulted in the acceptance of the null hypothesis for either or both of the stated hypotheses. Use of correlational techniques demonstrated the statistical nature of this study.

The ranking of behaviors, when summated for each of the fourteen behavioral areas, provided a frequency distribution which described those behaviors.[2] This ranking procedure assumed that the educators selected by quota sampling were representative of the profession. This ranking process might therefore be described as an empirical as well as a descriptive statistical technique, rather than an inferential one.

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[1] See Chapter I, p. 5.

[2] See Chapter III, p. 49.

The split-half reliability of the rating technique was also determined to investigate the reliability. A detailed study of the fourteen PLPs showed a need to evaluate them to determine their reliability for use in this experiment as well as in actual classroom design. The assumption that teachers were in fact basing their program upon the fourteen PLPs could also further be rejected or substantiated.

Pilot Study

The pilot study included practice sessions as well as an investigation of the independent variables, learning potential and reading achievement, used in this study.

The practice sessions involved the researcher in procedures such as selecting three subjects whose IQ scores were between 50 and 80 and then interviewing the subjects' assigned teachers regarding the degree of relative student deficit for each of the Fourteen Persistent Life Problems.

The investigation of the independent variables included determining the IQ range of the EMR students who might take part in this study and determining the standard score for reading achievement as well as the IQ for each child. These scores were taken from permanent record data concerning results of the Wide Range Achievement Test, the Stanford-Binet Intelligence Scale, Form L-M, 1972 norms, and the Wechsler Intelligence Scale for Children--Revised.

Subjects were selected for the practice sessions as well as for the study itself according to the following criteria:

1. an IQ score below 80 yet above 50 as determined by either of the above-mentioned intelligence scales within the last three years
2. assigned placement in special education classes for the educable mentally retarded prior to September 1, 1979
3. representation from primary, intermediate-junior high school, and high school programs for the educable mentally retarded determined through random sampling

An investigation of statistical and descriptive procedures resulted in the adoption of the following methods and techniques:

1. Pearson's Product-Moment Coefficient of Correlation for testing the hypotheses
2. Semi-interquartile range for determining those behaviors ranked as being most important
3. Spearman-Brown split-half reliability coefficient for investigating the extent of emphasis on the fourteen PLPs by teachers with respect to their daily teaching practices
4. Statistical procedures for developing a "prediction" (regression) equation

Ranking of the fourteen PLPs was carried out using three educators who were not specifically teachers of the educable mentally retarded. Special efforts were made to select staff who would normally not come into contact with teachers of the educable mentally retarded so as not to bias the results of the actual study. The Ranking Sheets[1] were employed with these teachers as described in Field Procedures.[2] The evaluation of the Field Procedures was based upon observations by the interviewer as well as questions raised and suggestions solicited from those who took part in the pilot study. Minor revisions were made as discussed in Chapter IV.[3] Comparisons were also made in this chapter between the pilot study procedures and the actual research procedures.

Selection of Subjects

Not all of the students enrolled in the program for the educable mentally retarded in the Union Local School District in Belmont County, Ohio, as of September 1, 1979, were used as subjects for rating the behaviors. It was anticipated that approximately eighty students would be enrolled in this program. The actual number was seventy-nine. Of these seventy-nine, ten did not meet the criteria previously stated.

A total of eighteen educators were selected to rate each of the fourteen points in regards to their importance to life patterns, the school curriculum and classroom procedures. These eighteen educators represented six teachers of EMR students, six teachers within the regular classroom, and six administrators.

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[1] See Appendix B, pp. 120-122.

[2] See Chapter III, pp. 45-47.

[3] See Chapter IV, pp. 52-58.

Instruments Identified

As previously stated, the permanent records were studied to determine whether the child had been given an individual intelligence test within the last three years. If the child had been given such a test, the score was accepted; if not, such individual was tested by the author using the Stanford-Binet Intelligence Scale, Form L-M, 1972, or the Wechsler Intelligence Scale for Children--Revised. The actual selection of the test was based upon the child's needs and personality characteristics.

To obtain the information regarding the child's present reading level, the Wide Range Achievement Test was administered to a total of sixty-nine children in May, 1979.

Field Procedures

One week prior to carrying out the rating of the children's behavior, an orientation meeting was held with the teachers involved in this study. This orientation meeting served as a first step in the field procedure. The teachers were given a list of developmental characteristics of youngsters ages three through adolescence.[1]

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[1] See Appendix A, p. 90.

During this orientation meeting, the teachers were provided with the following information:

1. Only the necessary information was being issued so as to make the interviewing procedure as efficient as possible. Teachers were expected to familiarize themselves with the contents of the document.
2. Although they were requested to study the developmental characteristics, a copy of the criteria would be provided during the interview for purposes of reference only. The teachers were asked not to rely upon this reference only as such reliance would impair the interviewing process.
3. Teachers of the educable mentally retarded were perhaps familiar with many of the characteristics of EMR students. However, they might not be familiar with expectations for youngsters of average and above-average learning potential. Since most of their efforts were directed towards educating the exceptional child, a review of normal developmental expectations appeared necessary to this study.
4. The curriculum which the teachers were using contained many of the expectations described as Measurable Objectives. These expectations were adjusted for the educable mentally retarded in many cases. For example, at the nine year level, children should be able to sing a tune while clapping or walking.

Each teacher was provided with information concerning only those age levels appropriate to his or her class. Which information should be given to which teacher was determined in this manner. By law in Ohio, the chronological age range for each elementary classroom EMR unit was forty-eight months. For each high school unit, the chronological age range was sixty months. A high school class could conceivably contain youngsters within the age range of fourteen through nineteen years. In this study, the oldest high school student was, in fact, nineteen years of age.

It was verified during the selection of subjects that each child chosen for this study did have an IQ score of at least 50. Such a score suggested that the child's learning potential was at least 50 percent of his chronological age, based on the theory: IQ = mental age divided by chronological age x 100. According to the traditional classification of the mentally retarded, the child's lowest possible developmental expectation in any given area indicated by mental age is to be no less than 50 percent of his or her chronological age if he or she was classified as educable, i.e., IQ scores 50-80.

Examples are given below for the process of selecting the appropriate age levels for the list of developmental expectations to be given each teacher. The high school teacher of the educable mentally retarded whose youngest student was fourteen would be given a list of the developmental expectations from half the lower age limit, seven, to the upper age limit, nineteen. The primary teacher whose students' ages ranged from six to ten would be given a list of developmental expectations ranging from age three upward to age ten. Again only appropriate age ranges were given to each teacher so as not to overwhelm that person.

Prior to the orientation meeting, criteria sheets had been prepared. These were designed to further assist the teachers in the decision-making process. Criteria were based upon the same concepts outlined earlier regarding the determination of the age range for the developmental expectation lists. Exact meanings of the criteria are outlined in Appendix C.[1] Such procedures also reduced the effects of different ages being used in this study, age being a potential intervening variable.

After the orientation meeting, the researcher then conducted a private interview with each of the teachers. The researcher read to the teacher the Fourteen Persistent Life Problems, one at a time, for each child, and recorded the teacher's numerical responses. A conversational rather than a highly structured approach enabled each teacher to be more at ease during this interviewing process. The teacher and the researcher together participated in a controlled observation situation.[2] General questioning was limited to phrases such as, "Depending upon the information given concerning expectations at various age levels, does Johnny 'manage money' as might be expected of a ten-year-old; a child of eight years, nine months; a seven year old; . . .?" Once the teacher had responded to that question, the interviewer would encourage him or her to rate the student according to a sequential descending scale of 5 through 1.

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[1] See Appendix C, p. 123.

[2] See Appendix D, p. 124.

Step mumber 3 involved ranking of the Fourteen Persistent Life Problems in order of importance to the program as the teacher perceived him/herself as presenting it at that time. This was carried out as the second field procedure. The ranking was done after the above rating procedure in order to reduce teacher bias. If the teachers had been asked to rank the fourteen PLPs in order of importance to their programs prior to rating each child, they might have seriously considered only the ones that they believed were important. Because of this assumption, the research questions were not parallel to the field procedure.

Teachers of the educable mentally retarded who participated in the orientation meeting and the interview which determined each child's developmental stage also participated in a second interview. Consecutive appointments were scheduled in order to facilitate the use of time and to assure that each conference would follow an identical format.

Teachers were asked to rate the fourteen areas[1] by placing consecutive numerals in the blanks: "1" indicated that the PLP area was most important, "2" indicated that the PLP area was second most important, etc. A ranking of "14" indicated that the area was least important. Although the format of the interview had been formalized, an active attempt was made by the researcher to stimulate a relaxed atmosphere in which teachers would feel free to express themselves openly. The teachers were discouraged from changing their responses solely in order to please the researcher.

The six administrators who were chosen for this phase of the research included a superintendent of schools, a supervisor, a special education administrator, an elementary school principal, a high school principal, and a remedial reading supervisor. These "administrators" were selected by title because their various points of view regarding implementation of the curriculum and child expectations could differ from the regular teachers or special education teachers. Their level of expertise was indicated by their specialized certificates and Masters of Arts degrees. All had experience working with both elementary and secondary students prior to this study as well as experience supervising or observing procedures for placement of the handicapped.

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[1] See Appendix B, p. 121.

Six teachers from the regular program were selected at random. The sampling procedure facilitated the selection of two elementary teachers, two middle school-junior high school teachers, and two senior high school teachers. These people had had little contact with teachers of the educable mentally retarded and were interviewed during the first grading period in accordance with the procedure outlined above for interviewing teachers of the educable mentally retarded during the second phase of this study. Administrators were also interviewed in the same manner.

Collection and Recording of Data

Each student's IQ score, reading achievement level, and reading standard score were recorded on the sheet containing that child's rating for the Fourteen Persistent Life Problems.[1] Standard scores for children of each age were determined from tables provided by the authors of the Wide Range Achievement Test so that children of different ages could be used in this study. A code book was then established to facilitate statistical processing.

Teacher/administrator ranking sheets used during the second phase of the field procedure were separated into three categories: teachers of the educable mentally retarded, teachers of regular education, and administrators. Within each group of educators, the ranking of each of the fourteen PLPs was averaged to facilitate analysis of data.

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[1] See Appendix D, p. 124.

Analysis of Data

The statistical tools employed in this study were the Pearson's Product-Moment Coefficient of Correlation, the Spearman-Brown Split-half Reliability Formula, and the Semi-interquartile Range.

Standard statistical procedures suggest the use of random sampling whenever Pearson's Product-Moment Coefficient of Correlation was employed. The rationale for this suggestion was based upon statistical theory which states that a normal distribution was more likely to occur when random sampling was carried out. Pearson's formula required that the variables assume a normal distribution. Thirty subjects were therefore selected at random from the sixty-nine subjects who qualified prior to this statistical treatment. The distribution of scores was examined prior to statistical treatment to verify that it was, indeed, normal.[1]

The hypothesis that those behaviors important to the academic success of the educable mentally retarded would correlate with reading achievement was tested at the 0.05 level of significance. It was assumed that those of the fourteen PLPs which would correlate significantly should also have been among those of the categories falling above the semi-interquartile range of the frequency distribution of rank totals, as discussed below.

IQ scores were also correlated with each of the fourteen categories using Pearson's Product-Moment Coefficient of Correlation. The same thirty subjects selected earlier for the correlations regarding reading achievement were also used in this statistical treatment. The hypothesis that those behaviors important to the academic success of the educable mentally retarded would correlate with measures of IQ was tested at the 0.05 level of significance. Since IQ is a measure of learning potential, defined as one's optimal level of achievement if all conditions necessary for success might occur, inferences might also have been made that those significant behaviors which correlated with IQ might have predicted success if development of a regression equation had been undertaken.

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[1] See Chapter IV, pp. 62-63.

As stated above, the rankings of the behaviors given by various educators were summed by category to determine which behaviors were most important to the school district's program for the educable mentally retarded. A cumulative frequency distribution based upon category totals was established for each of the fourteen behaviors for each group of educators. Percentiles were employed in order to determine the semi-interquartile range for each distribution. Since the rankings were based upon "1" being most important and "14" being least important, the lower cumulative frequencies indicated a relatively high degree of importance. Those of the fourteen categories falling above the semi-interquartile range were deemed important to the program as perceived by the various groups of educators. A comparison of the perceptions of the various groups is included in Chapter IV.

For each of the fourteen behaviors, the significance of each hypothesis was compared. Conclusions and implications were drawn with respect to the following criteria:

1. the behavior as appearing important to the program of the teachers of the educable mentally retarded
2. the behavior as appearing important to the other groups of educators
3. the behavior as correlating with reading achievement
4. the behavior as correlating with IQ

If three of these behaviors met the criteria listed above, a regression equation could have been developed. Using at least the IQ as correlating with the behavior as the prime screening criterion was necessary because of the nature of IQ which inferred predictability. Empirical discussion of other apparent significant behaviors meeting the majority of the criteria would also have been necessary. The stringency of this procedure was necessary because of the inferential nature of predictability.

Split-half reliability coefficients were also determine for the rating procedure.

To investigate validity of the methodology, four case studies were carried out. Subjects were selected on the basis of their having been mainstreamed during the 1978-79 school year. (At the time of this study, mainstreaming was described as having a student enrolled in special education for all or a portion of the school day.) In order to be considered as a candidate for mainstreaming, excellent achievement and progress must have been noted by the special education teacher of the student enrolled in the program for the educable mentally retarded. Predictability of this study, as stated in Chapter I,[1] was investigated since one might assume that youngsters who are mainstreamed are highly rated by their teachers with respect to the Fourteen Persistent Life Problems.

Summary

The manner for investigating the intent of this study, i.e., which student behaviors as described by the Fourteen Persistent Life Problems would correlate with results of standardized intelligence and achievement tests?, will now be briefly reviewed. To determine which student behaviors were most important, various groups of educators were asked to rank the fourteen PLPs in order of importance. Results were analyzed. To determine the extent of the correlation for the hypotheses, each of the fourteen PLPs was correlated with standardized measures of learning potential and reading achievement. To further attach importance to these fourteen areas, investigate their potential of predicting success, and examine the validity of the methodology, case study methods were employed.

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[1] See Chapter I, p. 1, above.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

Introduction

The selection of subjects, teacher's ratings of student behaviors, and ranking of the Fourteen Persistent Life Problems (PLPs) by various school personnel were analyzed and interpreted in depth. The procedure of analysis and interpretation followed the steps developed in the Methodology as presented in Chapter III. The steps included the following:

1. Pilot study
2. The study
    a) Selection of subjects
    b) Field procedures

To determine the feasibility of the design and effectiveness of the instruments, three children were selected as subjects for a trial run. These students were selected from students examined by the school psychologist during the first nine-weeks grading period of the 1979-80 school year. The three students selected had intelligence quotients within the range 70-81. Teachers of these three students were asked to rate each child on each of the Fourteen Persistent Life Problems.

Teachers of the educable mentally retarded were specifically not chosen during this pilot phase to avoid biasing the study. Although students from such classrooms could have been selected and the effectiveness of the instrument demonstrated, a need for refinement to provide more specific directions so that knowledgeable reaction to questionnaire items could be recorded was indicated. This conclusion became evident from the following patterns of teacher behavior.

In the first case when the questionnaire was administered to the teacher of the one student whose IQ score was below 80, the teacher herself was permitted to place the number in the blank for each of the fourteen items. This technique was intentional so that close observation of the teacher might occur. If the researcher were busy writing, much valuable information might have been lost, for example, concerning the interaction between the teacher and the researcher.

A second case dealt with a child whose IQ score was 81. This child was enrolled in a regular classroom team-taught by two teachers. The team teachers requested to be interviewed together as each reported to have had only limited knowledge of the youngster's strengths and weaknesses based upon developmental characteristics.[1] Moreover, each teacher had the child for different academic subject areas, specifically reading and math.

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[1] See Appendix A, p. 90.

The teacher who was interviewed for the third pilot example expressed a need to divide certain categories. For example, the first item stated "Communicates ideas verbally and in writing." This teacher would give a score of "5" for communicates verbally and a score of "3" for communicates ideas in writing. The teacher observed that the average "4" was recorded by the interviewer of this item. She was informed by the researcher that those items employing the conjunction "and" required "an average score." For the remainder of the interview, this teacher spent extra time determining the average of such categories.

Results of this procedure were valuable in that the following insight was provided:

From the protocol where the teacher was the recorder, three of the blanks were left empty. A more structured format, as explained in the previous chapter,[1] was used during all further interviews as a result of this occurrence. A need was shown for a structured, focused interview.

From the interview of the team teachers, the researcher learned that collaboration occurred in situations where more than two people were present. For those of the fourteen PLPs pertaining to specific subject areas, little disagreement occurred, as expected. For items pertaining to non-academic areas such as "Exercises care of dress and appearance," however, much debate and discussion was noted since the child was reported to have come to school better dressed on some days than on others.

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[1] See Chapter III, pp. 44-45.

That each of the team teachers paid different degrees of attention to the developmental characteristics prior to the pilot study assessments was indicated by differences in the teachers' responses. The regular education curriculum was not based upon the Fourteen Persistent Life Problems. The actual field procedures, however, were to be carried out with teachers of the educable mentally retarded where greater understanding of the developmental characteristics was assumed through better familiarity with the precise nature of each of the fourteen PLPs.

From the case of the teacher who averaged certain categories, the need for an interview rather than a survey format was further established. Dialog to clarify questions and concerns could not have occurred if a survey form were given to the teacher to be filled out at her leisure. Anticipation of the need for printed instructions, indicating that an "averaged" forced choice response was necessary and not a numeral for each section of the category, would not have been possible without such a pre-planning experience.

As the fourteen PLPs were to have been used to determine the probability of success of the exceptional child in a special classroom, the determination of the teachers' value judgment of the importance of each item was necessary. To determine the ranking of the fourteen PLPs according to their importance, six teachers in the regular program, six administrators, and six teachers of the EMR students ranked the fourteen PLPs in order of importance. The three groups of educators chosen were asked for their opinions regarding the relative importance of each of the Fourteen Persistent Life Problems based upon their experience in education and not specifically related to the curriculum for EMR children within the school district.

One teacher ranked each item the same on both check lists. For example, with the first item, a rank of "3" was given to "Communicates ideas verbally and in writing." This ranking was also given to the same item as related to reading achievement. Continuing this process, the same ranking was recorded for the same item on both pages.

Another teacher confused the dependent variables with indpendent variables. As pointed out in Appendix B,[1] teachers were to rank the importance of managing money (a dependent variable) to reading achievement (an independent variable), not the importance of reading achievement to managing money. One's reading skills were important to one's ability to manage money, live safely, travel, etc. The questionnaire specifically asked how important one's skill at managing money was to one's reading ability.

The third teacher expressed a need to first label each of the fourteen PLPs as being important or unimportant.

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[1] See Appendix B, p. 120.

The higher rankings could therefore be assigned to the ones marked "important" and the lower ranking assigned to the ones marked as unimportant. This technique was incorporated in the procedure. This third subject also filled out the ranking scale with little difficulty after the above clarifications were made. Thus, the directions for the rank ordering of the importance of the Persistent Life Problems were changed from:

> Please rank the following Fourteen Persistent Life Problems in terms of relevance to education. Your attention should be focused upon those areas which you believe to be essentially most relevant to your personal goals based upon student needs which you have set for the students as an educator,

to:

> The following pages are to be filled independently. Page #2 concerns IQ. Page #3 concerns Reading Achievement. Your answer to the items on any given page may not necessarily reflect your answers to items on any other page . . . .[1]

Little difficulty was encountered during the actual field procedures as a result of these experiences.

The author was well aware that the validity of the teacher's responses may be questioned as no objective or subjective instrument of measurement was used to evaluate teachers' attitudes. However, if this use of the PLPs proved to be functional in helping to determine the potential of the educable mentally retarded, the questionnaire should be a device that could stand on its own merit.

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[1] See Appendix B, p. 120.

During ranking and rating procedures, differences in sincerity and motivation were recorded. Some openly conveyed the attitude that they believed that they were participants in "just another study." Some showed a great deal of concern with providing accurate answers and attempted to please the researcher. The majority of the teachers, however, cooperated in a professional manner.

The Study

The actual investigation of this study represented six months of concentrated interviewing, observation, and statistical analysis of data.

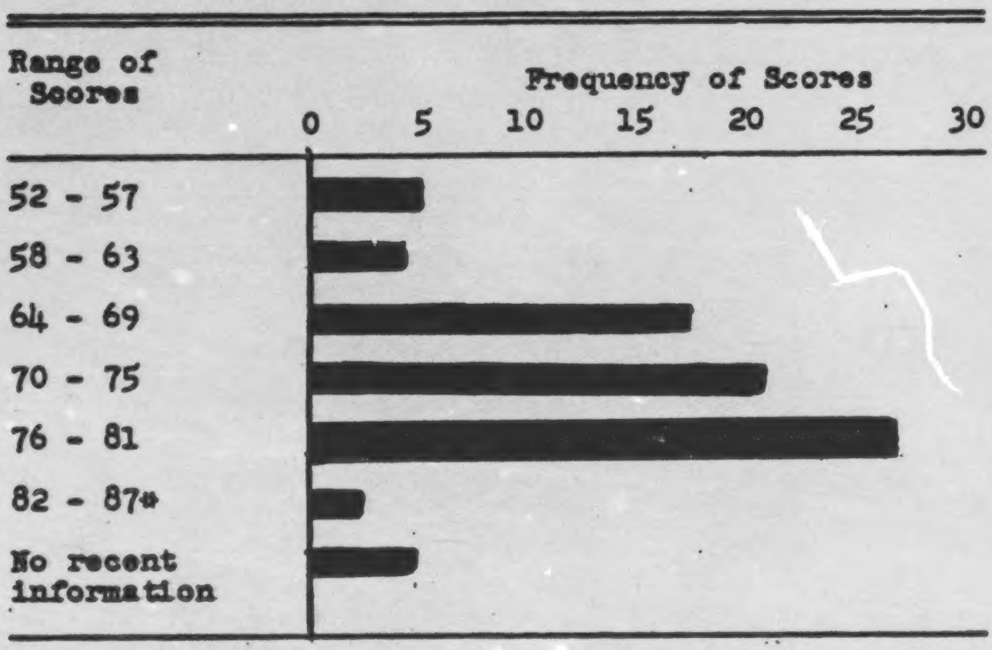
Selection of Subjects

A survey of the schools' records showed seventy-nine youngsters enrolled in special education classrooms for the educable mentally retarded. Their IQs ranged from 54 to 87. Their standard scores in reading, obtained from the Wide Range Achievement Test, ranged from 62 to 97. The following charts show the range of IQ and reading achievement scores.

Of the seventy-nine youngsters enrolled in special education classes as shown in Charts 1 and 2, ten did not qualify for participation in this study. Two of these ten had IQ scores above 80, hence did not legally qualify for placement in the program for the educable mentally retarded. The parents of two of the others, a brother and a sister, had refused to permit the reevaluation required every three years according to legislation in effect at the time of the

Chart 1

Frequency Distribution of IQ Scores for Seventy-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



* Subjects do not legally qualify for placement in the EMR program.

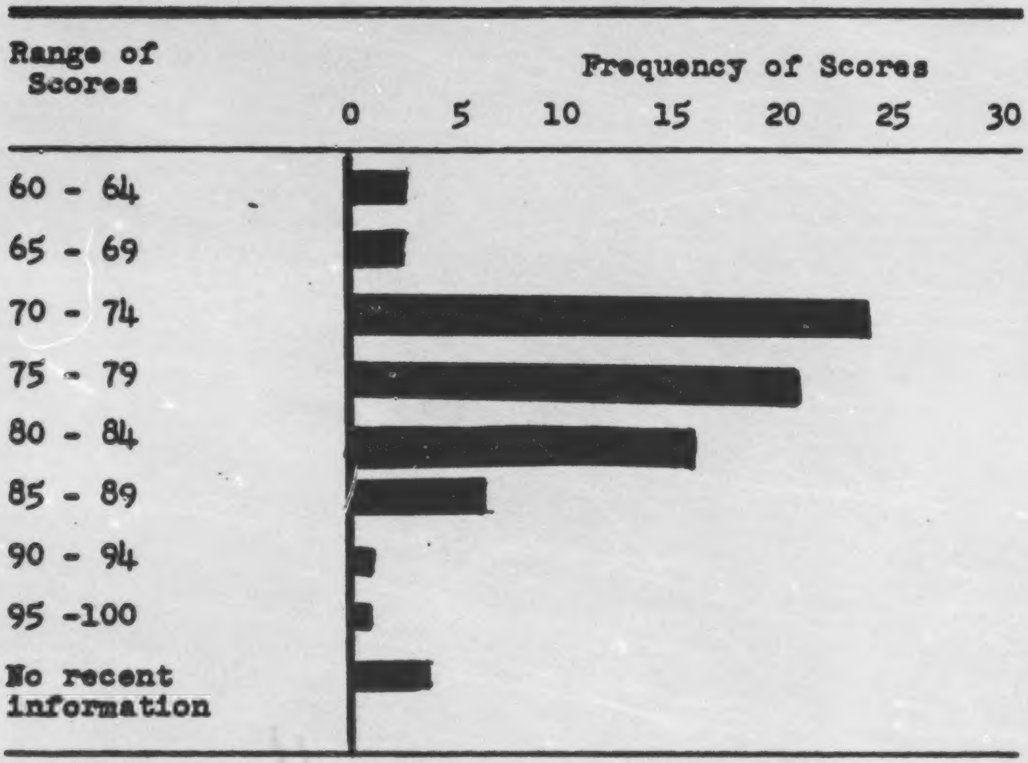
** Four of the ten cases rejected contained insufficient information.

study. One youngster's name was on the special education roster; however, this person refused to attend school having passed his eighteenth birthday. Five of the ten students had moved from this district prior to the researcher obtaining the necessary data. Of these five students, two did not have recent records.

Sixty-nine of the students selected had met the necessary criteria to become involved in this study. A chart was established to illustrate the distribution of IQ

Chart 2

Frequency Distribution of Reading Achievement Standard Scores for Seventy-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



scores for the sixty-nine subjects (Chart 3). The distribution of these scores was negatively skewed. Chart 4 was also established for the reading achievement scores for the same number of subjects. This distribution was positively skewed. Neither distribution satisfied the requirement of the scores assuming a normal distribution so that Pearson's Product-Moment Coefficient of Correlation could be employed.

Non-replacement random sampling of the sixty-nine cases was used in order to obtain a sample of thirty. A table of random digits was employed for this purpose. The

Chart 3

Frequency Distribution of IQ Scores for Sixty-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools

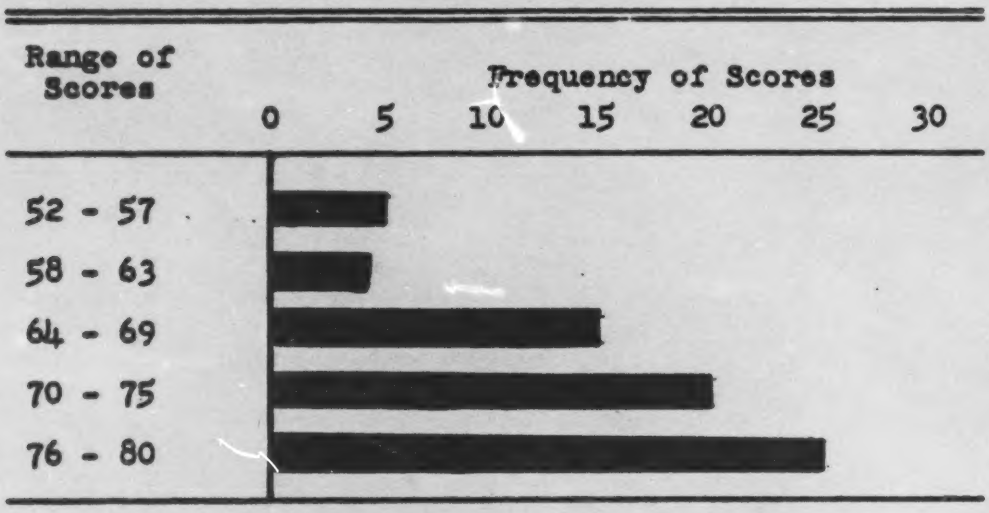
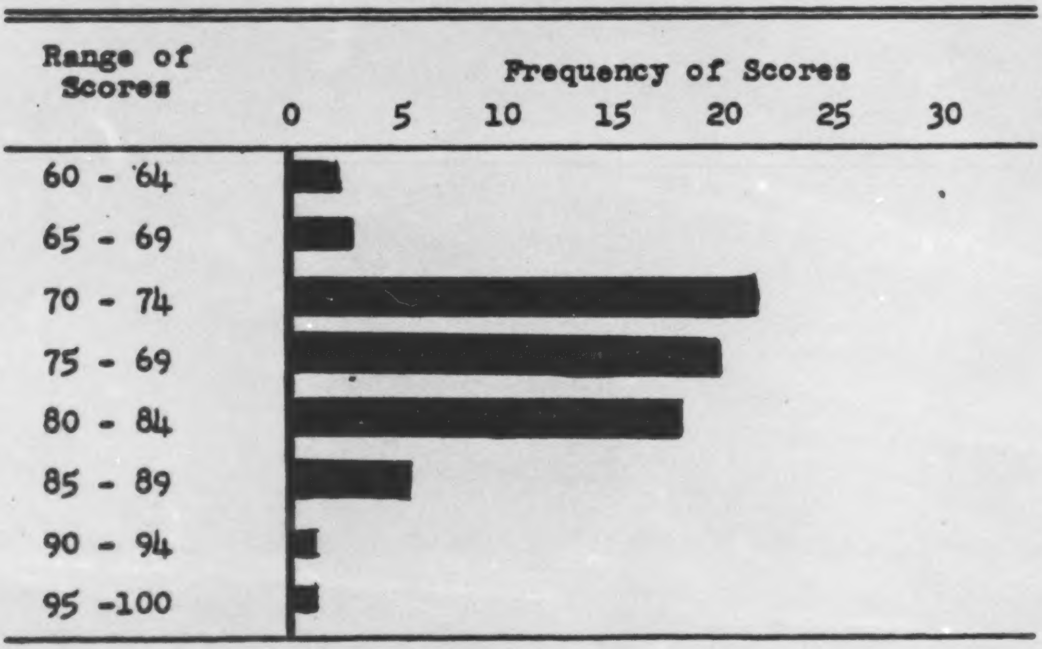


Chart 4

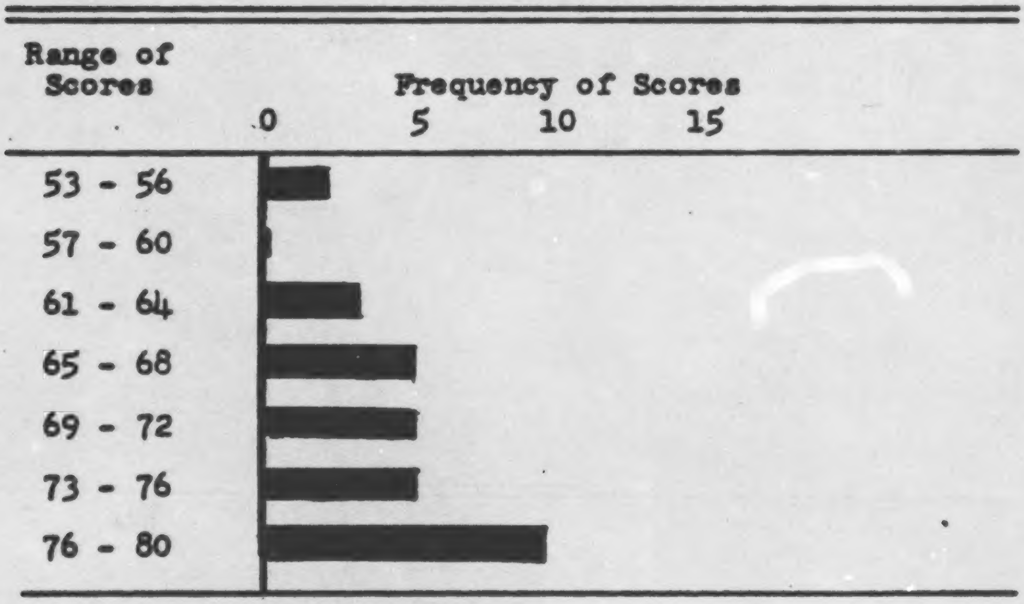
Frequency Distribution of Reading Achievement Standard Scores for Sixty-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



rating sheets for the sixty-nine cases were alphabetized and numbered consecutively, one through sixty-nine. For example, if the digits six, nine, and seven were obtained from the table, the sixth case, the fifteenth case (nine cases after the sixth case), and the twenty-second (seven cases from the fifteenth case) were chosen. This procedure was continued until thirty cases were selected.

Chart 5

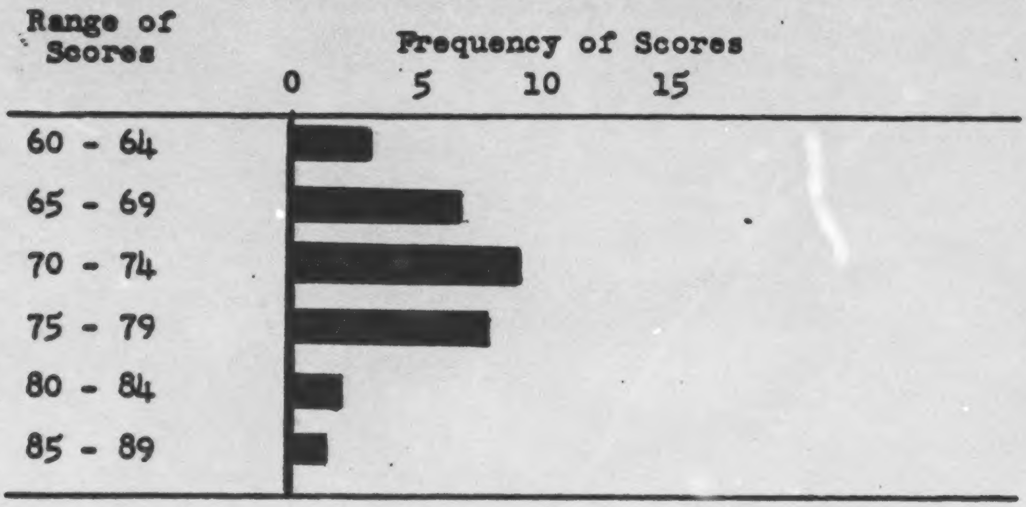
Frequency Distribution of IQ Scores for Thirty Subjects Randomly Selected from Sixty-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



As can be seen from Chart and Chart 6, a better approximateion of a normal distribution was present. These distributions better met the requirements for using Pearson's Product-Moment Coefficient of Correlation.

Chart 6

Frequency Distribution of Reading Achievement Standard Scores for Thirty Subjects Randomly Selected from Sixty-nine Subjects Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



Field Procedures

The results of the ranking of the Fourteen Persistent Life Problems will be discussed first as these results provided fundamental information relevant to the problem. This ranking procedure was developed during the pilot study.

One might recall that six administrators and six teachers of students in the regular program had been asked to rank the Fourteen Persistent Life Problems on a descending scale of one through fourteen as related to learning potential and reading achievement. Such rankings were to reflect the importance of each of these areas to education in general. To determine the importance to their programs as viewed by special education teachers, six such teachers were asked to rate the fourteen PLPs in a similar manner. Tables 3, 4, and 5 show a summary of the data provided by this activity.

A comparison of the results below indicated that the three groups essentially agreed that "Communication of ideas verbally and in writing," and "Communication of ideas through arithmetic" were very important to learning potential. Rank difference between teachers of the educable mentally retarded and the other two groups appeared to be similar. However, such variations inferred differences in frames of reference. Teachers of exceptional children might be expected to view the educational processes differently from other educators who had been exposed to a majority of regular classroom children.

This section dealing with the ranking of the Fourteen Persistent Life Problems by the various groups of educators with respect to learning potential appeared to have descriptive significance. With respect to IQ, the degree of agreement between the administrators and the teachers in the regular program suggested that both groups might be combined to form a reference group (hereafter referred to as such). Both the administrators and the teachers within the regular program agreed that "Communication of ideas verbally and in writing" was most important to scoring on an IQ test, that "Communication of ideas through arithmetic" was third, that "Understanding self and getting along with others" was fourth, and that "Managing money" was fifth (compare Tables 3 and 4).

TABLE 3

Importance of IQ to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by Teachers of Students Enrolled in the Regular Program in the Union Local Schools

Rank	Description	Number of teachers assigning that Persistent Life Problem a specific rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas verbally and in writing	4		1					1						
2	Communicates ideas through reading		4		1					1					
3	Communicates ideas through arithmetic			4		1					1				
4	Understands self and gets along with others	2			1		1	1				1			
5	Manages money				1		1		1	1	1	1			

TABLE 4

Importance of IQ to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by Administrators in the Union Local Schools

Rank	Description	Number of administrators assigning that Persistent Life Problem a specific rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas verbally and in writing	4	2												
2	Communicates ideas through reading	1	4	1											
3	Communicates ideas through arithmetic	1		3		1			1						
4	Understands self and gets along with others			1	2	2	1								
5	Manages money			1	2		1	1		1					
6	Earns a living				2	1	1		1			1			

TABLE 5

Importance of IQ to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by Teachers of the Educable Mentally Retarded in the Union Local Schools

Rank	Description	Number of teachers assigning that Persistent Life Problem a specific rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas through reading	3			1					1			1		
2	Communicates ideas verbally and in writing		3	2						1					
3	Earns a living		1			4	1								
4	Communicates ideas through arithmetic		2	2								1		1	
5	Manages money	1			2		1				1		1		

Teachers of the EMR and administrators were concerned with reading and the EMR youngsters' future potential to earn a living as related to IQ. These two areas were rated first and third respectively by the special education teachers (see Table 5). "Communication of ideas both verbally and in writing" as important to IQ was given a second place position by the teachers of EMR students, which was below the first place ranking given to this category by the reference group. Despite such slight variability, "Communication of ideas through reading," and "Communication of ideas verbally and in writing" appeared to be strongly related to learning potential.

A comparison of Tables 6, 7, and 8 indicated that all groups ranked "Communication of ideas through reading" as being the most important factor related to reading achievement. Considering the choices provided by the other thirteen factors,[1] such results occurred for obvious reasons. All groups believed that "Communication of ideas verbally and in writing" was second-most important to reading. Written and verbal communication were seen to be related to reading when the content of this subject matter was examined.

The teachers of the educable mentally retarded were the only group to ascribe the use of leisure time as an important factor related to reading achievement. One might have inferred that many EMR children did not like to read

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[1] See Appendix B., p. 121.

TABLE 6

Importance of Reading Achievement to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by Teachers of Students Enrolled in the Regular Program in the Union Local Schools

Rank	Description	Number of teachers assigning that Persistent Life Problem a specific rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas through reading	4	2												
2	Communicates ideas verbally and in writing	2	3	1											
3	Earns a living			1	2	1				1		1			
4	Lives safely without endangering self or others		1	1		1				1		1	1		
5	Communicates ideas through arithmetic			2	1					1	1				1

TABLE 7

Importance of Reading Achievement to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by School Administrators in the Local Union Schools

Rank	Description	Number of administrators assigning that Persistent Life Problem a specific rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas through reading	4	2												
2	Communicates ideas both verbally and in writing	2	4												
3	Communicates ideas through arithmetic			4					1				1		
4	Earns a living			1	1	1		2						1	
5	Understands self and gets along with others				1	2		1		1	1				

TABLE 8

Importance of Reading Achievement to the Fourteen Persistent Life Problems Ranked Above the Semi-interquartile Range by Teachers of the Educable Mentally Retarded in the Union Local Schools

Rank	Description	Number of teachers assigning that Persistent Life Problem a Specific Rank													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Communicates ideas through reading		4	2											
2	Communicates ideas verbally and in writing	5											1		
3	Uses leisure time wisely		2			1		2						1	
4	Earns a living			2		1		1	1					1	
5	Lives safely without endangering self or others			1			1	2	1	1					

because of previous experiences of failure, thus making the teacher of the EMR children acutely aware of this deficiency.

The teachers expressed concern for all groups of children, regardless of ability, to earn a living, as well as to live safely without endangering others, as related to reading. Not only did the teachers of the educable mentally retarded ascribe importance to these two factors but the teachers of children in the regular program also rated these factors highly. These two categories could easily be described as survival skills.

Great consideration was given by the researcher to the importance of the ranking of "Communication of ideas through arithmetic to reading achievement," not only by the regular classroom teachers but also by the administrators (see Tables 6 and 7). However, the EMR teachers failed to rank this facet as high in priority as the reference group did. Perhaps these items were misinterpreted as the importance of reading achievement to "Communication of ideas through arithmetic." One might surmise that a child can communicate ideas through arithmetic without being able to read, as did Thomas Edison. A child who cannot communicate ideas through arithmetic might at the same time be an excellent reader.

Persistent Life Problem, Number 8, "Earn a Living," and Number 4, "Understand oneself and get along with others," stressed a humanistic point of view which interpreted the child as an actor regarding the school's responsibilities beyond the teaching of the three Rs. Thus, educators who adhered to the philosophical point of view which stresses the child as acted upon, might have rated such items as being less important than items which stressed academic goals. Nevertheless these two items fell above the semi-interquartile range in several cases when rankings were combined for the various groups of educators.

Up to the present time, consideration has been given to two facets of this investigation:

1. Selection of subjects
2. Ranking of the Persistent Life Problems

The third facet of this investigation was to test the hypotheses, which were stated as follows:

1. Those behaviors described by the Fourteen Persistent Life Problems and deemed important to the academic success of the educable mentally retarded child will correlate significantly with a standardized measure of achievement
2. Those behaviors described by the Fourteen Persistent Life Problems and deemed important to the academic success of the educable mentally retarded child will correlate significantly with a standardized learning measure of potential

The procedure to test these hypotheses was a structured, focused interview. As discussed in Chapter III, teachers were provided with a copy of the developmental characteristics and orientation information.[1] The following week the researcher interviewed each of the six teachers and recorded their numerical responses indicating the degree of deficit for each of the Fourteen PLPs in regard to the progress made by the students under that teacher's jurisdiction. These numerical responses were correlated with standardized measures of learning potential and reading achievement. The results were reported in Chart 7. As can be seen from this chart, no significant relationships existed since the coefficient fell below 0.349.

None of the twenty-eight correlation coefficients concerning rating of the students by the teachers of the educable mentally retarded were found to be significant at the 0.05 level. A coefficient of at least 0.349 would have been necessary to accept the hypotheses for any of the fourteen PLPs at the 0.05 level. Both of the hypotheses were therefore rejected.

The split-half reliability coefficient for this rating technique was 0.79, however. This level of significance indicated the reliability of the technique since reliability coefficients of the magnitude of 0.80 and 0.90 have been generally considered significant for objective tests. The interview format of this procedure provided greater opportunity for intervening variables to contaminate

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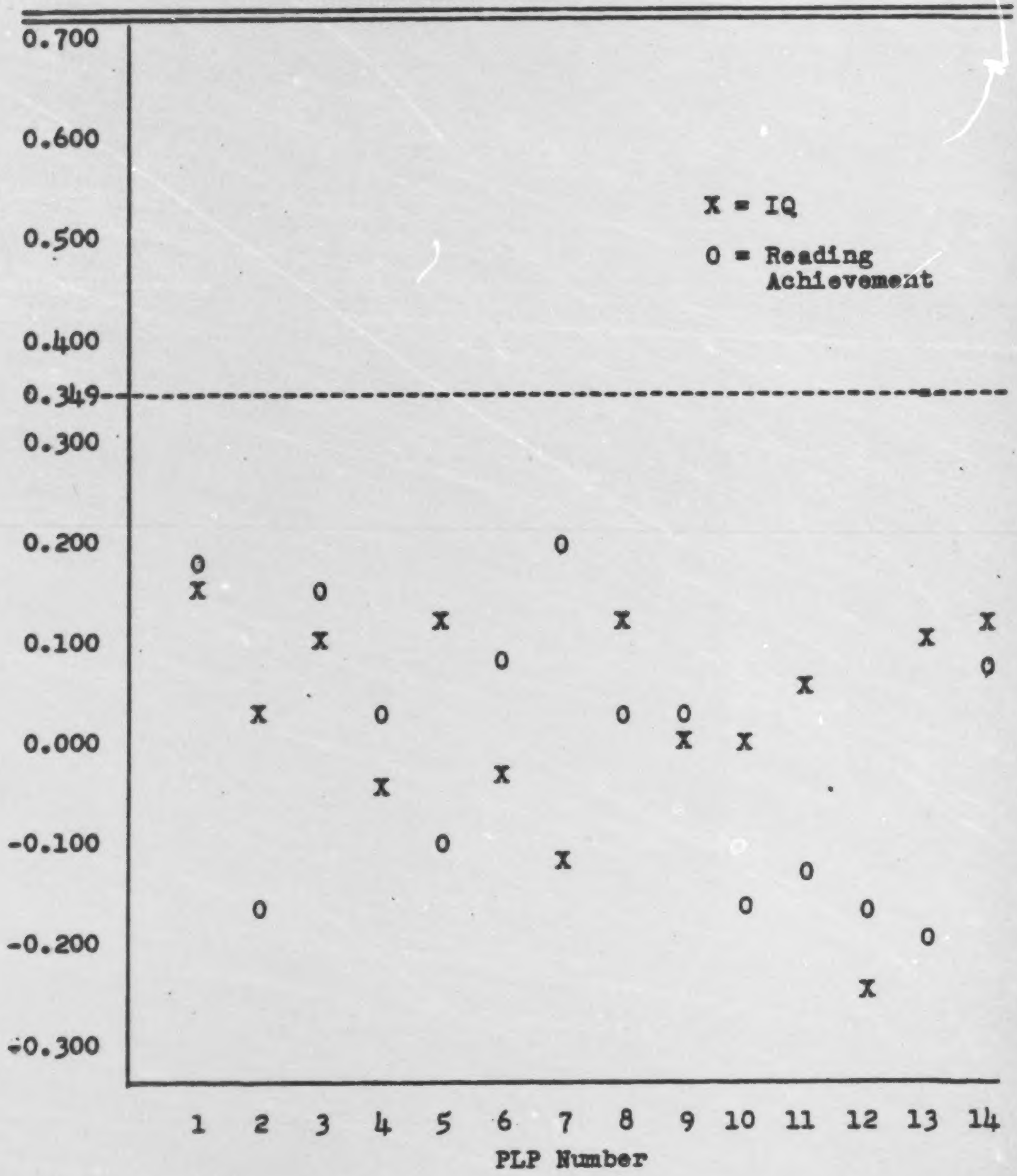
[1] See Chapter III, pp. 41-44.

Chart 7

IQ and Reading Achievement as Correlated with the Fourteen Persistent Life Problems (PLPs) for Thirty Students Enrolled in the Program for the Educable Mentally Retarded in the Union Local Schools



the findings. Moreover, the length of the rating procedure involving only fourteen items did not foster relatively high reliability coefficients. This interpretation related to the obtained coefficients inferred a moderate degree of reliability for this rating technique.

Four case studies were summarized in Table 9. These studies were undertaken to investigate relationships between the Fourteen Persistent Life Problems and degree of success in school. Only four out of sixty-nine students enrolled in the program for the educable mentally retarded in the Union Local Schools and used in this study were mainstreamed. All four were utilized in this study.

TABLE 9

Case Study Comparison for Four Cases of EMR Students Mainstreamed into the Regular Classroom in the Union Local Schools

	Case No.1	Case No.2	Case No.3	Case No.4
PLP Average	3.36	4.00	4.36	4.71
IQ	78	77	72	76
Reading Achievement Standard Score	74	76	84	81
Success of Student in Regular Program	Little	Little	Great	Inconsistent

As this data showed, the averages for the fourteen PLPs were above a level suggestive of a deficit of 25 percent (see Appendix C). The standard scores for reading achievement and IQ were above 70, i.e., within two standard errors of the test means. The borderline nature of these mainstreamed youngsters' abilities became quite apparent from this investigation; however, students met with varying degrees of success in the regular program.

A ten-year-old girl with an IQ of 78 and a reading achievement test standardized score of 74 had been mainstreamed into regular classroom handwriting instruction during the 1978-79 school year. Although her work in the regular classroom was recorded as C, she was not mainstreamed the following year as this grade was not representative of the criteria that had been established for regular classroom students. Although the fallacy of this grading system may be argued, the recorded grade failed to indicate that the girl's achievement was equivalent of a C grade. Nevertheless, with a PLP Average 3.36 suggestive of a deficit of slightly more than 25 percent and an IQ score of 78, the probability for her success was greater than that of a mainstreamed child whose PLP average and IQ score might have been much lower.

Case No. 2 involved a thirteen-year-old boy mainstreamed into intermediate math at the sixth grade level during the 1978-79 school year. In that subject area, his grades for the first nine weeks of that school year averaged a C. His report card for the first grading period showed a C average in all subjects. (As with the first case, this boy was not mainstreamed during the 1979-80 school year for reasons already discussed.) The psychological report, drafted prior to the attempt at mainstreaming, recommended that this child might benefit from a mainstreamed math program. If frustration occurred, he was to have been returned to the regular program for EMR youngsters. The subject manifested insecurity in the mainstreamed setting according to his teachers, which seemed to also indicate a need for full-time special education. As with the first case, the PLP average of 4.00 and the IQ score 77 suggested only a mild degree of deficit.

The third case involved a fourteen-year-old girl mainstreamed into a junior high school seventh grade math class. Unlike the two cases discussed above, this attempt at mainstreaming was successful. She maintained a B average in the regular math program with supportive services through the program for the educable mentally retarded. During the following school year she maintained a B+ average in the special education program. Plans for further mainstreaming met with resistance from teachers in the regular program; however, administrative personnel considered future attempts at this process for the welfare of the child. The PLP average of 4.36 indicates a degree of deficit less than 25 percent.

Case No. 4 was a sixteen-year-old high school girl enrolled in driver education and home economics, both subjects provided through the regular program. Attempts at mainstreaming were inconclusive in this particular case. In driver education, this girl encountered extreme difficulty in the theory portion of the course. Her recall of factual information such as traffic laws was quite poor. At that time, her instructor doubted that she would be able to pass the written or oral portion of the driver's licensure examination. In home economics, she was described by the teacher as one of the more intelligent students in the class. This course, however, was structured so that little was demanded of the students regarding the application of reading and other skill subjects. This adolescent's PLP average was 4.71, the highest of any of the four cases examined.

The inconsistency of success in mainstreaming youngsters enrolled in programs for the educable mentally retarded was to be expected in light of the borderline nature of their abilities as reflected in Table 9. Where reading achievement scores were relatively high, the success rates also were found to be high. The use of only four cases prevented a conclusion; however, a relationship which predicted success appeared to exist between IQ, reading achievement, and the PLP average for mainstreamed youngsters. Moreover, the mere fact that the four students were selected by school personnel for mainstreaming attested to their performance and ability, thus inferring that their PLP average should have been relatively high. The consistency among the PLP averages, IQ score, and reading achievement further supported the need to examine the stated hypotheses:

1. Those behaviors described by the Fourteen Persistent Life Problems and deemed to be important to the academic success of the educable mentally retarded child will correlate significantly with a standardized measure of achievement
2. Those behaviors described by the Fourteen Persistent Life Problems and deemed to be important to the academic success of the educable mentally retarded child will correlate significantly with a standardized measure

Summary

To summarize this chapter, a listing of the major findings is hereby presented:

1. The various groups of educators indicated that "Communication of ideas through reading" and "Communication of ideas verbally and in writing" were strongly related to learning potential
2. With respect to reading achievement (other than "Communication of ideas through reading"), "Communication of ideas verbally and in writing" was also deemed to be important
3. Results of the correlation of teacher ratings of student behaviors with standardized measures of learning potential and reading achievement were found to be nonsignificant

4. The split-half reliability coefficient attested to the reliability of methodology

5. The four students mainstreamed into regular classes, although they appeared to possess borderline learning potential as well as borderline or low-average reading skills, met with varying degrees of success in the classes into which they had been mainstreamed.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The intent of this study was to investigate the following hypotheses:

1. Those behaviors described by the Fourteen Persistent Life Problems (PLPs) and deemed to be important to the academic success of the educable mentally retarded child would correlate significantly with a standardized measure of achievement
2. Those behaviors described by the Fourteen Persistent Life Problems and deemed to be important to the academic success of the educable mentally retarded child would correlate significantly with a standardized measure of learning potential

In order to secure data to determine the validity of the above stated hypotheses, the researcher initiated and concluded a field study involving thirty students and six teachers of the Educable Mentally Retarded.

Conclusions and Discussions

The data provided showed the following:

1. The instrument used to rate the thirty students proved to be reliable as the statistical analysis of data

yielded a correlation of 0.79. This conclusion was justified on the basis of the magnitude for reliability coefficients for objective tests being 0.80--0.90. The rating procedure employed was not as structured as an objective test.

2. The ranking of the Fourteen Persistent Life Problems as reported by special education teachers, regular classroom teachers, and administrators demonstrated the points of view of these three groups as the data was descriptively significant. This conclusion was drawn from the extent of agreement among the three groups. For example, one might recall that all groups ranked "Communication of ideas through reading" as being the most important factor related to reading achievement. Other similarities can be seen from a comparison of Tables 4, 5, and 6 as discussed in Chapter IV.[1]
3. The fourteen PLPs were interpreted by special education teachers, regular classroom teachers, and/or administrators as being vital to the academic curriculum in the following areas:
   a) Communicates ideas verbally and in writing
   b) Communicates ideas through reading
   c) Communicates ideas through arithmetic
   d) Manages money

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[1] See Chapter IV, pp. 66, 67, 69.

4. The fourteen PLPs were interpreted by special education teachers, regular classroom teachers, and/or administrators as being vital to the non-academic curriculum in the following areas:
   a) Understands oneself and gets along with others
   b) Earns a living
   c) Uses leisure time wisely
   d) Lives safely without endangering self or others

Both Conclusions No. 3 and No. 4 were drawn from an analysis of the rankings of the Fourteen Persistent Life Problems as related to learning potential and reading achievement in Chapter IV.[1] They provided information for educators for further consideration.

5. Implications were also made that the opinions of the reference group of administrators and regular teachers regarding the importance of the various Fourteen Persistent Life Problems related to IQ differed from the teachers of the EMR.[2] One might therefore conclude that frames of reference differed among educators. Value judgments regarding the relative importance of various aspects of the curriculum inferred that non-academic facts were more likely to be stressed by special education teachers.

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[1] See Chapter IV, pp. 63-73.

[2] See Table 3, p. 65.

6. Data provided in this study failed to support the basic hypotheses as stated. The measures of learning potential and reading achievement failed to correlate with any of the fourteen PLPs. PLP ratings of student behaviors were not important to standardized measures of learning potential and achievement demonstrated as demonstrated by the range of coefficients between -0.266 to 0.198 inclusive. The importance of these behaviors therefore was not substantiated through correlational techniques in light of the methodology used in this study, even though such behaviors were deemed to be important by a variety of educators as indicated by Conclusions No. 3 and No. 4 above.

The integration of learning potential (a psychological concept) with the Fourteen Persistent Life Problems (an educational concept), a goal of this study, was not possible due to the lack of correlation. For example, based upon the outcome of this study, one cannot prove that "Communication of ideas through reading" was related to standardized measures of reading achievement, despite the apparent logic of arguments and apparent assumptions. All groups, however, ranked "Communication of ideas through reading" as the most important factor related to reading achievement.

An issue was discussed in Chapter I concerning focus upon information provided by the classroom teachers. The statement was made that the scope of this study was limited by the frame of reference of teaching personnel. Although efforts were made to adjust the frame of reference of the six teacher participants through the use of developmental characteristics,[1] the six teachers used the information provided as orientation data for the interviews to varying degrees. Too, teaching was often a matter of individual style; hence, teachers formulated individual opinions.

The selection of thirty subjects however was adequate for obtaining possibly significant correlations at the 0.05 level of significance using Pearson's Product-Moment Coefficient of Correlation. Correlation coefficients of at least 0.349 would have resulted in the acceptance of the hypotheses for specific PLP areas. Significantly negative coefficients, had they occurred, would also have provided data for further interpretation and discussion.

Recommendations

Regardless of low correlations and different points of view as shown by analyses of data, the study in and of itself provided material for serious thought and consideration, such as the focus upon the parameters of learning potential and reading achievement. These two independent variables need further refinement. Practical aspects of future research should focus upon refinement of these two areas as they have been related to each of the Fourteen Persistent Life Problems. Herein lies a topic for future research.

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[1] See Appendix A, pp. 90-119.

A review of the data presented indicated a need for the following:

1. Predictability aspects be investigated both horizontally and longitudinally
2. A larger representation of the American school population be employed, e.g., a combination of rural and urban systems
3. The match pair concept of the selection of subjects be carried out. Teachers of the EMR might be matched with teachers in the regular program with respect to such variables as a degree of education, age, sex, and number of years experience so as to control intervening variables
4. An extensive orientation program for all personnel involved be carried out
5. Consideration be given to a follow-up study of the children involved regarding their academic and social adjustment during the next year or after a period of two years. Such follow-up was being considered by the researcher at the time of this study.
6. PLP averages be correlated with IQ and achievement levels so as to investigate the overall composite of the PLPs as related to these variables. By combining

this suggestion with the other facets, an overall importance of the PLPs might be evidenced even though specific relationships might not be shown.

Summary

The major findings of this study have been recapitulated below:

1. The technique for rating the students by the teachers proved to be reliable
2. The fourteen PLPs were seen by various groups of educators to be vital to both the academic and the non-academic curriculum. However, frames of reference varied among the groups.
3. Those behaviors described by the Fourteen Persistent Life Problems and deemed important to the academic success of the educable mentally retarded child did not correlate significantly with standardized measures of learning potential or achievement.

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APPENDIX A

Normal Developmental Characteristics of Children Arranged in Order of the Fourteen Persistent Life Problems

Ages Three through Six

1. Communicates ideas verbally and in writing:

    a) can name common objects by categories of use (3)*

    b) can express self well enough to make needs and wants known (3)

    c) can attend to short, simple stories and music (3)

    d) is able to imitate simple, sequential sound patterns (3)

    e) recognizes inclusive words such as all, none, some, etc. (4)

    f) follows simple concise directions from the teacher (4)

    g) can use large muscle movements (4)

    h) uses pencil for drawing (4)

    i) pays attention to others' sharing experiences (5)

    j) asks lots of questions (5)

    k) can trace and follow dots in developing finger dexterity (5)

    l) can color within a designated area (5)

    m) begins to express relationships between ideas (6)

    n) can put together simple 6 to 8 piece puzzles (6)

    o) prints simple words (6)

*Number in parentheses () indicates approximate age.

2. Communicates ideas through arithmetic:
   - a) knows the difference between comparative words such as long and short, big and little, close and far (4)
   - b) can distinguish differences in shapes and sizes (4)
   - c) understands relational terms (up-down, far-near) (4)
   - d) can handle polar opposite (e.g., big-little) (4)
   - e) is aware that number symbols stand for things (5)
   - f) understands the concept of zero (5)
   - g) can count to 5 (4), can count to 10 (5), can count to 20 (6)
   - h) understands grouping (6)
   - i) understands "take away" (6)
3. Communicates ideas through reading:
   - a) in general is not ready for reading (5)
   - b) can distinguish between pictures and words (5)
   - c) shows reading readiness as determined by kindergarten performance (6)
   - d) has skills of listening such as gross auditory discrimination, memory, and closure (6)
   - e) has skills of gross visual discrimination, memory, sequence, and closure (6)
   - f) recognizes a few meaningful configurations ("stop," "men," "women," and his name) (6)
4. Understands oneself and gets along with others:
   - a) can point to the major parts of the body (i.e., head, arms, legs) (3)
   - b) knows and can tell his name and age (4)
   - c) participates in sharing and taking turns (4)
   - d) takes care of toys and belongings (4)

e) follows directions (4)

f) begins to be capable of self-criticism (5)

g) is aware of the physical characteristics of self and others such as likenesses and differences in height, weight, age, and apparel (5)

h) usually interested in group activity (5)

i) likes teacher, often demanding immediate attention (5)

j) knows and observes the rules of the classroom and the school (5)

k) can play successfully in small groups (5)

l) knows the difference between his and others' belongings (5)

m) exhibits inconsistencies despite the beginnings of self-understanding (6)

n) is in awe of his teacher and older adults (6)

o) needs active participation in group activities (6)

p) is aggressive, wants to be first, engages in keen competition and much boasting (6)

q) knows the rules of courtesy such as "excuse me," "thank you," and "please" (6)

r) speaks in turn (6)

5. a) knows that money buys things (5)

b) in general, can be trusted with money (6)

c) differentiates between coins (recognizes penny, nickel, dime) (6)

6. Exercises care of dress and appearance:

a) washes hands unaided (4)

b) buttons coat (4)

c) in general can wash, feed and toilet self but occasionally needs help (5)

d) washes face unassisted (5)

e) can tie shoes (6)

f) dresses self except for tying (5)

g) brushes teeth correctly and often (6)

7. Uses leisure time wisely:

a) although often noisy and vigorous, activities can be directed; shows purposefulness and constructiveness (5)

b) needs supervision with a minimum of interference (6)

8. Earns a living:

a) realizes that parents or guardians work (4)

b) realizes that other people work (5)

c) realizes that people can help others through work (6)

9. Lives safely without endangering self or others:

a) recognizes authority (i.e., teacher, bus driver) (4)

b) leaves objects of danger alone (i.e., matches, knives, and pins) (4)

c) stays out of medicine cabinet (4)

d) rides his tricycle correctly (i.e., stays out of streets) (4)

e) stays with accompanying adult in traffic (4)

f) stays away from water (4)

g) knows not to accept rides or gifts from strangers (4)

h) knows not to put fingers and foreign objects in ears, eyes, nose, or mouth (4)

i) goes about neighborhood unattended (5)

j) follows fire drill procedures (5)

k) knows how to get on and off school bus (5)

- l) knows not to pat stray dogs and cats (5)
- m) needs supervision with a minimum of interference (6)

10. Homemaking and family living:

- a) is eager and able to carry out some responsibilities (5)
- b) is able to do small tasks for self (5)
- c) shows through self-assurance that he is loved at home and valued at school (5)
- d) is able to do small tasks for others (6)
- e) often acts less mature at home than with outsiders (6)

11. Travels and moves about:

- a) walks downstairs one step per tread (4)
- b) shows whether right- or left-handed (5)
- c) is farsighted (5)
- d) motor skills are developed unevenly; performs extremely well in one skill and very poorly in another (5)
- e) readily utilizes playground equipment requiring the exercise of large muscles (5)
- f) physical development of boy is usually about a year behind that of girls (5)
- g) can line up, fall in, count off and follow commands (5)
- h) has good general motor control though small muscles are not as well developed as large muscles (6)
- i) whole body especially is involved in whatever child does (6)
- j) can catch, throw, and bat (6)
- k) goes to neighborhood school unattended (6)

12. Appreciates, creates and/or enjoys beauty:

    a) recognizes pleasant sounds (3)

    b) is capable of performing for others (4)

    c) greatly enjoys dramatic play (5)

    d) knows the colors and can use them to express feelings (5)

    e) has some conception of balance (6)

13. Understands the physical environment:

    a) knows the rooms in his house (3)

    b) knows what a clock is (3)

    c) recognizes times of day: morning, noon, afternoon, and night (3)

    d) knows the location of his house (4)

    e) knows and carries out chores such as picking up clothes, etc. (4)

    f) knows that activities are governed by time (5)

    g) knows the work of his father and mother (guardian) (6)

    h) knows the days of the week (6)

14. Exercises responsible citizenship:

    a) is not always careful with possessions and the possessions of others (5)

    b) knows the difference between his and others' belongings (5)

    c) begins to respond to given responsibilities which are not rigidly defined (6)

    d) shows little concern for the welfare of the group (6)

Ages Seven through Nine

1. Communicates ideas verbally and in writing:

   a) verbal communication limited since child is not able to do abstract thinking comparable to adults (7)

   b) speaks loudly enough without shouting (7)

   c) can handle not statements (e.g., it is not here) (7)

   d) speaks in complete sentences (7)

   e) distinguishes and associates rhyming words (7)

   f) has adequate control for writing (7)

   g) writes name (7)

   h) copies complete sentences (7)

   i) talks over the telephone in an acceptable manner (8)

   j) can handle or statements (e.g., you may go or stay (8)

   k) is able to show changes in meaning through oral expression (8)

   l) listens carefully for three or more instructions (9)

   m) copies complete headings, time and dates on papers (9)

   n) copies correct capitalization and punctuation (9)

2. Communicates through arithmetic

   -- obtains arithmetic scores between the second and fourth grade level on standardized achievement tests depending upon exact age level

3. Communicates ideas through reading

   -- is reading approximately between a second and fourth grade level depending upon age

   a) develops liking for adventure stories and comic books; reads on own initiative (8)

   b) wide discrepancy in reading ability between youngsters (9)

4. Understands oneself and gets along with others:
    - a) quite self-critical and cautious (7)
    - b) concerned with right and wrong, yet actions are inconsistent with words (7)
    - c) recognizes differences in how boys and girls are expected to behave (7)
    - d) highly competitive and quarrelsome (7)
    - e) sensitive to feelings and attitudes of others and especially dependent upon the approval of adults (7)
    - f) dependent upon teachers; may wait for approval before starting a task (7)
    - g) argues over fairness in games (7)
    - h) can share experiences, possessions and ideas with others in class (7)
    - i) knows appropriate behavior in the classroom, halls, lunchroom, drinking fountain, bus, etc. (7)
    - k) develops capacity for self-evaluation (8)
    - l) develops awareness of individual differences (8)
    - m) friendly and interested in people (8)
    - n) noisy and argumentative (8)
    - o) very responsive to group activities (8)
    - p) elects team games (8)
    - q) needs a special pal (8)
    - r) becomes independent of teacher (8)
    - s) knows proper behavior at movies, for example, so as not to disturb others (8)
    - t) has strong sense of right and wrong; actions suggest child is becoming more dependable, reasonable, and responsible (9)
    - u) wants answers to questions regarding physiological changes (9)
    - v) gangs are strongest; develops intense loyalty (9)
    - w) outspoken and critical of adults (9)

5. Manages money:

   a) knows the values of coins to a dollar (7)

   b) understands uses of money (8)

   c) recognizes signs of ¢ and $ (8)

   d) knows that five pennies make a nickel, two nickels make a dime, two quarters make a half dollar, and four quarters a dollar (8)

6. Exercises care of dress and appearance:

   a) bathes self assisted (7)

   b) has adequate habits of cleanliness, neatness, and care of property (7)

   c) shows personal preferences in the selection of clothing (7)

   d) uses tissues or handkerchief properly (7)

   e) knows that different clothes are worn for different weather (7)

   f) combs/brushes hair (8)

   g) bathes self unaided (9)

7. Uses leisure time wisely:

   a) has independent work habits (7)

   b) can recognize when a task is completed (7)

   c) must be reminded of responsibilities (8)

   d) becomes easily discouraged when pressured (9)

   e) must be given definite responsibilities (9)

8. Earns a living:

   a) realizes that it takes many businesses and services to make up a community (7)

   b) develops the beginnings of skills in the use of tools (7)

   c) realizes that each member of the family has certain tasks to perform at home to keep the home functioning (8)

- d) develops use of tools so that finished products emerge (8)
- e) becomes more proficient in the use of tools; finished products contain more detail and show planning (9)

9. Lives safely without endangering self or others:
   - a) recognizes and responds to emergency sounds (trucks, cars, trains, airplanes) (7)
   - b) recognizes direction signs and warnings (7)
   - c) understands rules for fire drill (7)
   - d) knows safe behavior on the playground (7)
   - e) knows safe behavior on the school bus (7)
   - f) reports emergency (i.e., fire) to person in charge (7)
   - g) understands dangers of medicine (7)
   - h) understands pedestrian traffic signals and rules (7)
   - i) due to increased enthusiasm, accident rates are higher at age eight than at any other previous age level (8)
   - j) uses language to give directions to and follow directions from others relevant to safety (8)
   - k) picks up belongings (8)
   - l) stays away from streets, alleys, and railroad tracks (8)
   - m) shows proper respect for bodies of water such as swimming pools, lakes, rivers (stays in shallow areas) (8)

10. Homemaking and family living:
    - a) goes to bed unassisted (7)
    - b) knows the rules of good table manners (8)
    - c) knows the rules of cooperation in family activities such as conversation, T.V., use of the telephone, and parties (8)

10. d) can help wash dishes properly in hot water and soap (8)

    e) carries out routine tasks (8)

    f) cares for pets (8)

    g) works towards task completion without supervision (9)

    h) cares for plants (9)

11. Travels and moves about:

    a) growth becomes slow and steady, hence eye-hand coordination becomes much improved over earlier age levels (7)

    b) eyes are not yet ready for extended close work (7)

    c) restless and fidgety when tired (7)

    d) enjoys play that uses the whole body (7)

    e) sits erect at desk; stands erect (7)

    f) irregular growth makes certain parts of the body seem out of proportion (8)

    g) poor posture often develops (8)

    h) eyes ready for near and far vision (8)

    i) small muscles become better developed so that exercises become necessary (8)

    j) very active so that child learns best while being active (8)

    k) girls physically larger than boys (9)

    l) hands and muscles ready for crafts and practical arts as determined by observation (9)

    m) eyes ready for close work without being strained (9)

    n) likes rough active games (9)

    o) can handle his body weight in skills of strength, speed, and coordination (8)

12. Appreciates, creates and/or enjoys beauty:

    a) can recognize texture (7)

    b) knows that artistic products have organization (8)

    c) knows that shape is used to convey a feeling or idea (9)

    d) has a strong feeling for beat and rhythmic patterns (9)

    e) can sing a tune while clapping or walking the beat (9)

    f) can read the tones do, mi, sol, and la if given training (9)

    g) can read simple songs which contain the tones do, mi, sol, and la if given training (9)

13. Understands the physical environment:

    a) understands the measure of time (7)

    b) knows the function of a scale (7)

    c) knows his home address, telephone number, and birthdate (7)

    d) knows the names of his family members and can give ages of siblings (7)

    e) knows the community helpers: police, fireman, garbage collector, milkman, bus driver or subway conductor, and mailman (7)

    f) knows what to do when lost (7)

    g) can recognize common foods and tell when they are usually eaten: breakfast, lunch, dinner (7)

    h) tells time to the quarter hour (8)

    i) knows the location of his home with respect to stores, movies, public buildings, etc. (8)

    j) knows about family service personnel such as doctor, dentist, nurse, clergyman, and druggist (8)

    k) can read a weather thermometer (9)

    l) understands the value of three well-balanced meals (9)

14. Exercises responsible citizenship:

    a) shows respect for community property, cares for school equipment and materials (7)

    b) obeys public rules of orderly conduct (7)

    c) shares and takes turns in group activities (8)

    d) becomes interested in the affairs of local community and other countries (9)

Ages Ten through Twelve (Pre-adolescence)*

1. Communicates ideas verbally and in writing:

    a) rapid growth in ability to reason and think out problems is evidenced

    b) shares experience with others in class using understandable speech

    c) uses complete thoughts when expressing self

    d) makes introductions with ease

    e) knows how to ask for directions and help

    f) makes announcements to class

    g) knows how to give simple directions

    h) uses a telephone, can answer properly, takes and gives messages, and makes emergency calls

    i) employs auditory discrimination to facilitate understanding

    j) can respond appropriately to directions

    k) can re-interpret a speaker's short message in his own words

    l) writes legibly in cursive writing

    m) writes occasional short letters

*Note: Appropriate ages noted earlier cannot be given for the majority of items since pre-adolescents, adolescents, and young adults exhibit a great deal of variability with respect to the various traits.

n) uses proper punctuation

o) writes friendly notes and addresses them correctly

p) keeps simple notes or minutes of meetings

q) uses abbreviations found in his experience (Dr., St., Mr., Mrs.)

r) writes lists in alphabetical order

s) writes phone numbers, addresses, ages, and birthdays

t) writes notes to parents and others when necessary

u) has extensive usable written vocabulary

2. Communicates ideas through arithmetic:

-- scores approximately between the fifth and seventh grade arithmetic level on any standardized arithmetic test. Actual score should be commensurate with grade placement.

3. Communicates ideas through reading

a) scores approximately between the fifth and seventh grade reading level on any standardized reading test. Actual score should be commensurate with grade placement.

b) enjoys books, newspapers, and magazines

4. Understands oneself and gets along with others:

a) aware of emergent secondary sex characteristics

b) aware of enormous appetite, one which is very irregular in tastes

c) aware that girls are often two years more mature than boys

d) recognizes when one has engaged in behavior which has good inter-personal consequences

e) is able to participate in a cooperative effort

f) continues to participate in gang activities (girls are not as loyal to gangs as are boys)

g) teasing and antagonism develops between girl and boy groups

h) maturity levels vary greatly, hence interests also vary

i) exhibits need for feelings of belonging and acceptance (affection) by adults as well as peers

j) understands role in group play; discriminates when choosing a leader

k) can participate in "low organizational" games

5. Manages money:

a) makes minor purchases alone

b) does small remunerative work

c) can name and distinguish coins and bills through $20.00

d) can correctly use money symbols in written form

e) can make change correctly up to $20.00

f) can make minor purchases correctly by oneself

g) understands the relationship of coins

h) knows what a bank is for

6. Exercises care of dress and appearance:

a) knows procedures for care of fingernails and hair

b) realizes that certain clothes must be worn for various reasons and weather conditions

7. Uses leisure time wisely:

a) need to organize becomes apparent (emergence of self-reliance)

b) collections become more than a passing interest, occupying much of leisure time

8. Earns a living:

   a) interests of boys and girls become widely different, providing input into future vocational choices

   b) in general, usually interested in any type of activity which will earn money

   c) does small remunerative work

   d) knows that school experiences prepare people for everyday living including future vocational activities

   e) understands and practices punctuality

   f) knows about some of the local institutions, occupations and businesses and the jobs people perform

   g) realizes that people work at many different kinds of jobs

   h) realizes that different skills and types of knowledge are required to perform different jobs

   i) understands the difference between work and play

   j) knows and carries out own responsibilities

   k) has good work habits

   l) exercises self control

   m) has pride in accomplishment

   n) can distinguish between satisfactory and unsatisfactory task behavior

9. Lives safely without endangering self or others:

   a) knows the location of and how to use the nearest fire alarm and police station

   b) knows procedure for treating simple cuts and abrasions so as to avoid infection

   c) avoids danger on playground

   d) respects inflammables, electricity, and power tools

- e) understands and practices fire prevention
- f) understands civil defense signals
- g) operates a bicycle safely
- h) respects policemen and other law officers
- i) can float, swim, or tread water
- j) realizes there are certain foods that a person should eat every day for good health
- k) understands the importance of refrigeration and cleanliness with food

10. Homemaking and family living:
    - a) cares for self at table
    - b) puts food away and cleans up after self in kitchen at snack-time
    - c) handles food with cleanliness
    - d) understands need for regular health and dental checkups
    - e) can be left to care for self and younger siblings

11. Travels and moves about:
    - a) growth of the various body parts is very irregular, hence coordination is often poor
    - b) periods of laziness and restlessness alternate due to fatigue related to rapid growth
    - c) fine-motor control becomes quite refined
    - d) travels about hometown freely
    - e) knows about transportation facilities

12. Appreciates, creates and/or enjoys beauty*

   a) interests among boys and girls differ widely as do aesthetic interests

   b) does creative work on own initiative

   c) can recognize the elements in artistic productions

   d) has a grasp of perspective

   e) recognizes the principles of rhythm, repetition, and variety

   f) can use various media appropriately

   g) can recognize major and minor sounds

   h) knows the major diatonic scale

   i) knows half-steps

   j) knows notation and signatures

   k) can recognize the sound of different kinds of music

13. Understands physical environment:

   a) understands the relationship between personal fitness and performance

   b) can relate three or four events in chronological order

   c) can attend to tasks of interest for extended periods of time

   d) can classify by use of physical characteristics

   e) knows what to do if he gets lost in town or country

   f) knows the need for regular dental and medical check-ups

   g) understands menstration

   h) understands basic functions of organs such as heart, lungs, etc.

*Note: Depends upon experiential background. Average children possess the potential to learn these items during pre-adolescence.

i) can identify important people by role and title

j) can tell time by the minute. Uses clock and calendar correctly.

k) understands past, to, before, after, noon, midnight, and weekend with respect to time

l) can use a ruler and yardstick

m) can measure distance in blocks (tenths of a mile)

n) can use standard measures: cup, teaspoon, tablespoon, pint, quart, and gallon

o) understands directions of left, right, north, south, east, and west

p) knows and can use scales, thermometer, and temperature gauge

q) understands sphere, cone, cube, and pyramid

r) understands areas, diameter and perimeter

14. Exercises responsible citizenship:

a) knows about Columbus Day, Independence Day, and other government holidays

b) knows what a community is

c) knows that mayors, governors, and the president are important leaders

d) recognizes and can accept rules and laws.

Ages Thirteen through Fifteen (Early Adolescence)*

1. Communicates ideas verbally and in writing:

a) extremes in thinking activity often observed

b) a "know it all" attitude frequently verbalized; impudence occurs

*Note: There is much overlap among the fourteen categories with respect to the placement of various items. Although an item could be placed in more than one category, it is assigned to one category to save space.

c) can converse acceptably

d) speaks before peers with ease

e) speaks pleasantly, courteously, and clearly

f) can make and complete a long distance phone call

g) knows simple procedures for democratic meetings

h) conducts and participates in committee or small group meetings

i) can listen to and carry out detailed instructions

j) can describe a story read to him or movie, TV, or record listened to

k) communicates regularly by letter: writes an acceptable letter

l) writes a good simple sentence

m) writes a complete paragraph

n) fills out application forms correctly

o) can order by mail

2. Communicates ideas through arithmetic:

-- scores approximately between the eighth and tenth grade level on any standardized arithmetic test. Actual score should be commensurate with grade placement.

3. Communicates ideas through reading:

-- scores approximately between the eighth and tenth grade levels on any standardized reading test. Actual score should be commensurate with grade placement.

a) shows some interest in pleasure reading

b) can read a newspaper to obtain information

c) can develop and read detailed experience charts

d) can use reading to get information

e) understands and can use the dictionary

f) follows current events

4. Understands oneself and gets along with others

   a) intense fear of ridicule and being unpopular emerges

   b) oversensitivity to criticism and indulging in self-pity (ideally can accept criticism)

   c) practices good personal hygiene, health habits, and grooming in establishing relationships with others

   d) can participate in appropriate role positions in group activities such as leader and member; engages in adolescent group activities

   e) recognizes the contribution of classmates in group activities in terms of skill, time, moral support, and money.

   f) understands the consequences of choosing company unwisely

   g) knows own vital statistics for filling out application forms

   h) knows personal strengths and limitations

   i) has realistic job aspirations

   j) can accept and follow directions

   k) can participate in group projects

   l) can work alone

   m) strong identification with admired adult is noted

   n) girls more interested in boys than boys in girls

   o) resentment of any kind of threat toward feelings of freedom and independence, hence requires adult guidance which is kindly and unobtrusive; requires feelings of security

5. Manages money:

   a) buys own clothing accessories

   b) understands banking deposits, withdrawals and how to write checks

   c) knows how to buy by the dozen, case, and carton

- d) understands what a budget is for
- e) can pay for lunches and transportation
- f) understands how wages and hours are related

6. Exercises care of dress and appearance:
    - a) height and weight gains result in concern regarding appearance
    - b) high interest in physical attractiveness emerges
    - c) exercises complete care of dress
    - d) knows how to select and wear appropriate clothes
    - e) uses body deodorant
    - f) has basic understanding of bodily functions

7. Uses leisure time wisely:
    - a) activities reflect ability to exhibit independence from family
    - b) interest in recreation activities especially important to this age group
    - c) develops hobbies as an outgrowth of collections
    - d) plays difficult adult table games

8. Earns a living:
    - a) understands the importance of being punctual for work and appointments
    - b) develops a knowledge of job possibilities in the community
    - c) understands that there are governmental agencies which can help the individual with training and finding jobs
    - d) has facility in the use of tools and materials

9. Lives safely without endangering self or others:
    a) knows how to stop bleeding by pressure
    b) knows how to give assistance in case of accident (keeping injured warm, keeping crowd back)
    c) uses inflammable materials with care
    d) can release an electric fuse properly
    e) can operate a power lawn mower safely
    f) respects automobiles and knows they must be kept in good repair
    g) is safe in the water
    h) can give artificial respiration
    i) can identify poison oak, poison ivy, and poisonous snakes and spiders
    j) can travel about safely in the community
10. Homemaking and family living:
    a) performs responsible routine chores
    b) can apply time to household and work tasks
    c) knows the roles of family members
    d) knows proper care for infants
    e) can plan a balanced meal
    f) can cook and bake simple recipes
11. Travels and moves about:
    a) adult height often reached in girls
    b) fatigue apparent due to irregular growth
    c) glandular imbalances observable (acne)
    d) goes to nearby places alone
    e) can read a road map
    f) can use the community transportation system

12. Appreciates, creates, and/or enjoys beauty:
    - a) can view art with understanding of elements and principles
    - b) knows how different elements contribute to musical production
    - c) recognizes different kinds of instruments
    - d) can appreciate different musical styles
13. Understands physical environment:
    - a) understands the relationship of time, work, and wages
    - b) can read Roman numerals on a clock
    - c) can apply time to household and work tasks
    - d) can measure and figure distance
    - e) can measure and use measures of quantity
    - f) knows the geographical divisions of the state
    - g) can read tables and time schedules
    - h) can understand home utilities and maintenance
14. Exercises responsible citizenship:
    - a) shows interest in worthy causes
    - b) knows appropriate behavior in various community situations
    - c) knows something about state government
    - d) picks up objects which may trip others

Ages Sixteen and Above

1. Communicates ideas verbally and in writing:
    - a) has acceptable interview skills
    - b) knows and uses correctly the appropriate vocational vocabulary

  c) can carry on acceptable social conversation
  d) can participate in group discussions
  e) can re-interpret messages
  f) can take and record messages
  g) can fill out order blanks
  h) can record inventory records
  i) can make usable shopping lists
  j) uses proper language in association with co-workers and supervisors

2. Communicates ideas through arithmetic:
  a) understands bookkeeping and record keeping
  b) understands budgeting, withholding, gross, net, taxable, credit, and deferred
  c) can make out tax forms
  d) can relate income to expenses
  e) can perform the arithmetic functions required on his job

3. Communicates ideas through reading:
  a) can read and understand information pertaining to bills and statements
  b) can read and understand simple sales contracts
  c) can read and use simple reference materials
  d) enjoys magazines and newspapers such as Time and National Inquirer
  e) reads adequately for self protection and the welfare of others such as safety signs and warnings

4. Unde[illegible]nds oneself and gets along with others:

    a) can participate in social dancing

    b) understands acceptable boy-girl relationships and the need for responsible relationships with members of the opposite sex

    c) has a sense of responsibility toward himself and others

    d) can participate in planning and carrying out group activities

    e) can select self-directed activities and sustain the activities

    f) realizes and accepts his strengths and weaknesses

    g) can evaluate his own efforts and production

5. Manages money:

    -- in general, understands the aspects of money management

    a) has own spending money

    b) assumes personal property

    c) controls own major expenditures (above 18-0)

6. Exercises care of dress and appearance:

    a) buys own clothing

    b) can dress correctly and attractively for various occasions

    c) demonstrates appropriate hygiene and grooming habits

    d) independently maintains healthful daily routine

7. Uses leisure time wisely:

    a) may be completely unsupervised during daytime

    b) goes out unrestricted at night if not dependent upon parents (above 18-0)

c) participates in voluntary sports activities

d) can perform adequately in parlor games of cards, etc.

e) can budget time

8. Earns a living:

a) has a job or continues schooling

b) can follow a described work plan

c) understands measuring relative to job

d) knows the relationship between authorities (leaders) in occupational groups and workers

e) can adapt to new situations

f) knows about jobs which may be available in area

g) knows which abilities are needed in various occupations

h) knows how to analyze jobs

i) knows how to fill out application forms, social security, and withholding an union forms

j) knows current wage and hour laws

k) knows of fringe benefits such as hospitalization, insurance, and vacations

l) knows about unemployment benefits

m) can use the services of the state employment agency and vocational rehabilitation

n) is dependable at place of employment

o) gets along with peers and supervisors

p) does not interfere with fellow workers

q) can work at a competitive pace for a full day

r) shows self direction in his work

s) can initiate new tasks related to job

- t) demonstrates company loyalty
- u) can perform simultaneous and sequential tasks
- v) is aware that good job performance is related to good living habits

9. Lives safely without endangering self or others:
    - a) looks after own health
    - b) is aware of safety for himself and others at work
    - c) can operate power tools safely
    - d) understands most First Aid procedures
    - e) can put out small fire
    - f) understands accident hazards for babies and small children
    - g) can operate car and small truck safely
    - h) observes safety rules of plant and business
    - i) can make a simple non-swimming water rescue
    - j) is aware of danger of smoking, alcohol, and drugs
    - k) knows importance of pre-natal program

10. Homemaking and family living:
    - a) understands the obligations of and responsibilities for worthwhile family life
    - b) develops regard for keeping home neat, clean, and attractive
    - c) knows agencies which provide help in family emergencies
    - d) can prepare simple meals
    - e) can plan house furnishings
    - f) can repair and care for clothing
    - g) understands basic home nursing

11. Travels and moves about:
    - a) goes to distant points alone
    - b) greater strength and coordination emerges (males especially)
    - c) can read and interpret maps and directions
12. Appreciates, creates, and/or enjoys beauty:
    - -- same as age range 13-15
13. Understands physical environment:
    - a) can set up a budget
    - b) can keep accurate budget and check records
    - c) understands installment buying
    - d) understands various insurances
    - e) understands the values of credit and the mechanics of financing
    - f) understands the mechanics of upkeep vs. repair costs
    - g) understands federal, state, and local taxes at an uncomplicated level
    - h) understands how time is used in computing pay
    - i) understands measurement in clothing and cooking
    - j) understands ramifications of ratios such as miles per gallon
    - k) understands three dimensional measuring
    - l) understands the reasons for organization, committees, and other groups

14. Exercises responsible citizenship:

    a) can participate in group discussions for problem solving purposes

    b) becomes a licensed driver

    c) becomes a registered voter

    d) understands and obeys traffic and other laws

    e) understands the responsibilities, duties, and rights of citizens

APPENDIX B

RANKING SHEETS

The Fourteen Persistent Life Problems (PLPs) as Related to IQ and Reading Achievement

General Directions

The following pages are to be filled out independently.

Page #2 concerns IQ
Page #3 concerns Reading Achievement

Your answer to the items on any given page may not necessarily reflect your answers to the items on any other page.

Each of the 14 items is to be related to the factor at the top of the page. For example, you are to rank the importance of managing money to Reading Achievement, page 3, not the importance of Reading Achievement to managing money. It is realized that Reading is important to some degree to one's ability to manage money. However, the purpose of this investigation is to determine the importance of managing money to Reading Achievement. Should a teacher emphasize managing money more so than any or some of the other 13 areas when teaching reading? Might the classroom time be better spent on another area? Your answers to these and similar questions should better enable you to rank the 14 areas.

If you have any questions, please contact C. B. Drugan.

IQ

THE FOURTEEN PERSISTENT LIFE PROBLEMS (PLPs) AS RELATED TO IQ

1) In Front of each of the 14 Persistent Life Problems, place an I in the blank if you feel that the Factor is important to IQ. Place a U in the blank if you feel that the factor is unimportant to IQ.

2) Behind each of the 14 Persistent Life Problems, rank each of the 14 areas in order of its importance to IQ.

   a. Place the number 1 in front of the factor which you believe to be most important.
   b. Place the number 2 in front of the factor which you believe to be second most important.
   c. Continue this ranking process until you have ranked all of the 14 areas. The number 14 will indicate your choice that the item was least important to IQ.

THE FOURTEEN PERSISTENT LIFE PROBLEMS

Importance (I)
Unimportance (U)

Ranking--Most Important (Number 1)
to Least Important (Number 14)

_____ 1. Communicates ideas verbally and in writing _________

_____ 2. Communicates ideas through arithmetic _________

_____ 3. Communicates ideas through reading _________

_____ 4. Understands oneself and gets along with others _________

_____ 5. Manages money _________

_____ 6. Exercises care of dress and appearance _________

_____ 7. Uses leisure time wisely _________

_____ 8. Earns a living _________

_____ 9. Lives safely without endangering self or others _________

_____10. Homemaking and family living _________

_____11. Travels and moves about _________

_____12. Appreciates, creates, and/or enjoys beauty _________

_____13. Understands physical environment _________

_____14. Exercises responsible citizenship _________

READING ACHIEVEMENT

THE FOURTEEN PERSISTENT LIFE PROBLEMS (PLPs) AS RELATED TO READING ACHIEVEMENT

1) In Front of each of the 14 Persistent Life Problems, place an I in the blank if you feel that the Factor is important to Reading Achievement. Place a U in the blank if you feel that the factor is unimportant to Reading Achievement.

2) Behind each of the 14 Persistent Life Problems, rank each of the 14 areas in order of its importance to Reading Achievement.
    a. Place the number 1 in front of the factor which you believe to be most important.
    b. Place the number 2 in front of the factor which you believe to be of second most importance.
    c. Continue this ranking process until you have ranked all of the 14 areas. The number 14 will indicate your choice that the item was least important to Reading Achievement.

THE FOURTEEN PERSISTENT LIFE PROBLEMS

Importance (I)
Unimportance (U)

Ranking--Most Important (Number 1) to Least Important (Number 14)

_____ 1. Communicates ideas verbally and in writing _____________

_____ 2. Communicates ideas through arithmetic _____________

_____ 3. Communicates ideas through reading _____________

_____ 4. Understands oneself and gets along with others _____________

_____ 5. Manages money _____________

_____ 6. Exercises care of dress and appearance _____________

_____ 7. Uses leisure time wisely _____________

_____ 8. Earns a living _____________

_____ 9. Lives safely without endangering self or others _____________

_____10. Homemaking and family living _____________

_____11. Travels and moves about _____________

_____12. Appreciates, creates, and/or enjoys beauty _____________

_____13. Understands physical environment _____________

_____14. Exercises responsible citizenship _____________

APPENDIX C

RATING LEVELS FOR CHILD

Name ____________________ **Building** ____________________

Teacher ____________________ **Child's Birth Date** __________

____

1. ____________________ (child's name) should be given a score of 5 if there is no deficit in the mentioned behavior. His performance is equal or very nearly equal to his actual chronological age: ____________, meaning 0 deficit.

2. A score of 4 would mean that his performance is nearly comparable to a child of chronological age: __________, a 12 1/2 % deficit.

3. A score of 3 would mean that his performance is nearly comparable to a child of chronological age: __________, a 25% deficit.

4. A score of 2 would mean that his performance is nearly comparable to a child of chronological age: __________, a 37 1/2 % deficit.

5. A score of 1 would mean that his performance is nearly comparable to a child of chronological age: __________, a 50% deficit.

Note: "His" in the above sentences may refer to his or her.

APPENDIX D

THE FOURTEEN PERSISTENT LIFE PROBLEMS
RATINGS FOR EACH CHILD

Note to interviewer: Place the teacher's numerical rating of the child in the blank in front of the number. List spontaneous comments made by the teacher below each item or on the back of this paper.

Each of the fourteen categories is to be rated using a 5, 4, 3, 2, or 1.

Name ______________________ Classroom Teacher __________
(child)

_____ 1. Communicates ideas verbally and in writing

_____ 2. Communicates ideas through arithmetic

_____ 3. Communicates ideas through reading

_____ 4. Understands oneself and gets along with others

_____ 5. Manages money

_____ 6. Exercises care of dress and appearance

_____ 7. Uses leisure time wisely

_____ 8. Earns a living

_____ 9. Lives safely without endangering self or others

_____10. Homemaking and family living

_____11. Travels and moves about

_____12. Appreciates, creates, and/or enjoys beauty

_____13. Understands physical environment

_____14. Exercises responsible citizenship

IQ ________ Reading Achievement Level ______

Reading Achievement Standard Score ______

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